Performance Testing Suricata
The Effect of Configuration Variables On Offline Suricata Performance

A Project Completed for CS 6266
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Abstract

The Suricata IDS/IPS engine, a viable alternative to Snort, has a multitude of potential configurations. A simplified automated testing system was devised for the purpose of performance testing Suricata in an offline environment. Of the available configuration variables, seventeen were analyzed independently by testing in fifty-six configurations. Of these, three variables were found to have a statistically significant effect on performance: Detect Engine Profile, Multi Pattern Algorithm, and CPU affinity.

Acknowledgements

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I. Introduction

Suricata is an open source IDS/IPS produced by the Open Information Security Foundation (OISF). OISF's stated goal "is to remain on the leading edge of open source IDS/IPS development, community needs and objectives.[1]" Suricata development started in July 2008[2] in response to perceived stagnation of development on the Snort engine. In a little over three years of development, Suricata has grown into a codebase of over 250,000 lines[3] and become a full-featured IDS. However, as with any nascent project, performance testing and documentation do not always keep up with development. As such, this project was undertaken to aid in determining the affect of various Suricata configuration variables on its performance.

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1 "Suricata Downloads." *The Open Information Security Foundation*. Web. 27 Sept. 2011.
   <http://www.openinfosecfoundation.org/index.php/downloads>.
2 "Suricata Engine." *Ohloh, the Open Source Network*. Web. 27 Sept. 2011. <https://www.ohloh.net/p/suricata-engine>.
3 "Suricata 1.1 Beta 2." *The Open Information Security Foundation*. 13 Apr. 2011. Web. 27 Sept. 2011.
   <http://www.openinfosecfoundation.org/download/suricata-1.1beta2.tar.gz>.

II. Materials

Performance testing environment consisted of an HP ProLiant DL360 G3 Server running Debian GNU/Linux 6.0.2. The system was running Linux kernel 2.6.32-5-686 configured for SMP.

Basic server specifications are as follows:

CPU: 2xIntel Xeon 2.80 GHz/533FSB Processor and 512KB L2 Cache

width: 32 bits

capabilities: smbios-2.3 dmi-2.3 smp-1.4 smp

RAM: 2560 MB (2x1 GB, 2x256 MB) PC2100 DDR SDRAM running at 266MHz.

HDD: 2x36 GB

A full specification sheet is available from the HP website..[4] More complete hardware and software information is available in Appendices A and B.

The server entered service on 21 Jan 2003 and has seen active use in at least three physical locations. Completely autonomous use of the server for the duration of the semester was graciously provided by my employer.

All preparatory work, as well as all work not directly related to the testing, was conducted on a Dell D620 workstation running Ubuntu 11.04.

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4   "HP Proliant DL360 G3 Server." *HP Business Support Center*. HP. Web. 15 Dec. 2011.
     <http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?
     lang=en&cc=us&taskId=120&prodSeriesId=316558&prodTypeId=15351&prodSeriesId=316558&objectID=c00
     409027>.

III. Methodology

Experimental Design

After numerous e-mail conversations with members of the Suricata team, it was decided

that I would proceed with an off-line test using a publicly available packet capture file as input.

The Suricata configuration variables to be tested were as follows:

1.   A 'control' test consisting of the baseline configuration.
2.   CPU-Affinity
 a) Enabled
 b) Disabled
3.   Detect-Engine Profile
 a) High
 b) Medium
 c) Low
4.   Flow: Memcap
 a) 33554432
 b) 67108864
 c) 100663296
 d) 134217728
5.   Flow: Hash Size
 a) 65536
 b) 131072
 c) 196608
 d) 262144
6.   Flow: Prealloc
 a) 10000
 b) 20000
 c) 30000
 d) 40000
7.   Flow: Emergency Recovery
 a) 15
 b) 30
 c) 45
8.   Flow: prune_flows
 a) 5
 b) 10
 c) 15
 d) 20
9.   Flow Timeouts: TCP: New
 a) 10
 b) 30
 c) 60

10.   Flow Timeouts: TCP: Established
a) 300
b) 600
c) 800
d) 1800
e) 3600
11.   Flow Timeouts: TCP: Closed
a) 20
b) 30
c) 60
d) 120
12.   Stream: Checksum Validation
a) enabled
b) disabled
13.   Stream: Inline Mode
a) enabled
b) disabled
14.   Stream: Memcap
a) 33554432
b) 67108864
c) 100663296
d) 134217728
15.   mpm-algo
a) ac
b) ac-gfbs
c) b2gc
d) b2gm
e) b2g
f) b3g
g) wumanber
16.   Max Pending Packets
a) 50
b) 100
c) 150
d) 200
17.   Request Body Limit
a) 3072
b) 6144
c) 9216
d) 12288

Although these variables do not represent a comprehensive list of configuration variables available in Suricata, they were selected based on importance to the development team, likely impact on performance, and capability of testing with the available hardware. I selected the variation within a given configuration option in order to sample as much as possible of the acceptable range for that option.

Suricata Set Up

Per the request of the Suricata team, Suricata was compiled from source following a guide available on the OISF website.[5] All dependencies were acquired from the Debian repositories as follows:

apt-get -y install libpcre3 libpcre3-dbg libpcre3-dev build-essential autoconf automake libtool libpcap-dev libnet1-dev libyaml-0-1 libyaml-dev zlib1g zlib1g-dev libnetfilter-queue-dev libnetfilter-queue1 libnfnetlink-dev libnfnetlink0

A folder for the Suricata source tree was created, and the tree was downloaded with git:

git clone git://phalanx.openinfosecfoundation.org/oisf.git

The included script autogen.sh was run. At this point, installation differed slightly from the manual in that packet profiling:

./configure –enable-profiling

Folders for logging and configuration were generated:

mkdir /var/log/suricata
mkdir /etc/suricata

Suricata configuration template files were copied from their place in the source tree from Git to the configuration directory:

cp classification.config /etc/suricata
cp reference.config /etc/suricata
cp suricata.yaml /etc/suricata

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5   "Suricata - Debian Installation." *Open Information Security Foundation*. Web. 13 Dec. 2011.
    <https://redmine.openinfosecfoundation.org/projects/suricata/wiki/Debian_Installation>.

Suricata was configured to enable maximum packet examination, to test the engine under 'worst-case' traffic. A copy of the configuration is in Appendix C. Suricata was last cloned from Git on 08 October 2011, and was not updated for the duration of this project to avoid introducing unintentional variables.

Ruleset

A copy of the emerging threats ruleset was downloaded from the Emerging Threats website[6] on 06 October 2011, and was not updated for the duration of this project to avoid introducing unintentional variables. The Suricata.yaml configuration file was written to process these rules and exclude any rules that were in the template .yaml file but not in the experimental ruleset. The signature break down as reported by Suricata at runtime is as follows:

> 11730 signatures processed. 1355 are IP-only rules, 3948 are inspecting packet payload, 8258 inspect application layer, 0 are decoder/engine/stream event only

Packet Source

A publicly available data set consisting of packet capture files was obtained from the US Army Information Technology & Operations Center (ITOC).[7] After comparing the available files and testing them with Suricata for run time, I opted to use the first data capture file from the NSA in the ITOC data set (MD5: 790fa7d06392944e6e760aabb0bb6ba7). This file is approximately one gigabyte in size and was chosen because smaller files resulted in trial times too low to obtain useful data, due to the fact that Suricata's packet profiling has time resolution of one second, and combining files much larger than this one would quickly exceed RAM availability in the testing environment.

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6   "Rule Downloads." *Emerging Threats*. 06 Oct. 2011. Web. 06 Oct. 2011.
    <http://www.emergingthreats.net/index.php?option=com_content&view=article&id=16&Itemid=38>.
7   "CDX Datasets." *ITOC Research*. U.S. Army Information Technology and Operations Center, 14 Sept. 2010.
    Web. 22 Oct. 2011. <http://www.itoc.usma.edu/research/dataset/>.

<u>Testing</u>

A total of fifty-nine Suricata configuration files were created–one for each configuration to be tested, and one baseline file for a control group. Suricata was then run repeatedly with each configuration file with its output piped to a file. To ease in data collection, the configuration files were divided into folders based on the variable to be tested's hierarchy within the original Suricata.yaml template file. The collection was automated through the use of a script written as part of this project. To help eliminate bias caused by caching efficiency, an extra trial with the control configuration was run first and its results discarded. A description of the folder hierarchy and the full text of the experiment script are included in Appendices D and E.

Suricata execution time was provided by Suricata's packet profiling function. Running times and numbers of alerts for all trials were extracted from the output files by use of "grep -r." Data analysis was conducted using the open source utility Gnumeric.

IV. Results

Running Time

A summary of data consisting of variable tested, its state, and its mean execution time follow:

(When a yes/no state is reported without its inverse, the control group is its inverse.)

Figure 1: Summary of results

Configuration Variable	State	Mean Running Time
Control	N/A	76.7
CPU-Affinity	Enabled	74.0
Detect Engine	High	67.0
Detect Engine	Low	147.0
Flow/Hashsize	65536	75.3
Flow/Hashsize	131072	77.0
Flow/Hashsize	196608	76.3
Flow/Hashsize	262144	76.3
Flow/Memcap	33554432	75.7
Flow/Memcap	67108864	75.7
Flow/Memcap	100663296	76.3
Flow/Memcap	134217728	77.0
Flow/Prealloc	10000	76.7
Flow/Prealloc	20000	76.0
Flow/Prealloc	30000	77.0
Flow/Prealloc	40000	76.0
Flow/Pruneflows	5	76.7
Flow/Pruneflows	10	76.7
Flow/Pruneflows	15	76.3
Flow/Pruneflows	20	76.7
Flow/Recovery	15	77.7
Flow/Recovery	30	78.0
Flow/Recovery	45	76.3
Flow-Timeout/TCP/Closed	20	76.3
Flow-Timeout/TCP/Closed	30	77.3
Flow-Timeout/TCP/Closed	60	77.7
Flow-Timeout/TCP/Closed	120	77.0

Flow-Timeout/TCP/Established	300	76.7
Flow-Timeout/TCP/Established	600	76.7
Flow-Timeout/TCP/Established	900	76.0
Flow-Timeout/TCP/Established	1800	77.3
Flow-Timeout/TCP/Established	3600	77.7
Flow-Timeout/TCP/New	10	77.0
Flow-Timeout/TCP/New	30	76.3
Flow-Timeout/TCP/New	60	78.3
Max Pending Packets	50	76.0
Max Pending Packets	100	77.7
Max Pending Packets	150	76.7
Max Pending Packets	200	75.3
MPM-Algo	ac	75.7
MPM-Algo	ac-gfbs	93.0
MPM-Algo	b2g	61.3
MPM-Algo	b2gc	65.3
MPM-Algo	b2gm	59.7
MPM-Algo	b3g	89.7
MPM-Algo	wumanber	57.0
Request Body Limit	3072	77.0
Request Body Limit	6144	76.3
Request Body Limit	9216	76.3
Request Body Limit	12288	76.3
Stream/Checksum Validation	Yes	76.7
Stream/Inline	No	75.7
Stream/Memcap	33554432	76.7
Stream/Memcap	67108864	76.7
Stream/Memcap	100663296	76.3
Stream/Memcap	134217728	76.0

Full running time results are included in Appendix F.

Variables Having No Significant Effect On Performance

Of the tested variables, the majority were found to have no statistically significant ($p<0.05$) affect on performance as measured by running time. These variables are listed below, along with their p-values when compared with the control group.

Figure 2: Variables Lacking Effect on Performance

Configuration Variable	p-value
Flow/Hashsize	0.10
Flow/Memcap	0.06
Flow/Prealloc	0.49
Flow/Pruneflows	1.00
Flow/Recovery	0.51
Flow-Timeout/TCP/Closed	0.39
Flow-Timeout/TCP/Established	0.61
Flow-Timeout/TCP/New	0.06
Max Pending Packets	0.64
Request Body Limit	0.57
Stream/Checksum Validation	0.18
Stream/Inline	0.38
Stream/Memcap	0.57

Variables Having a Significant Effect on Performance

Multi Pattern Algorithm

However, the choice of the Multi Pattern Algorithm (mpm-algo) was correlated with a statistically significant change in performance. The following chart shows six of the seven options for mpm-algo along with their p-value and observed mean difference in seconds when compared with the default algorithm of "ac:"

Figure 3: Choice of Multi Pattern Algorithm on Performance

mpm-algo (vs ac)	p-value	Observed mean difference (s)
b2gc	0.001	−10.3
b2gm	<0.001	−16.0
b2g	0.010	−14.3
b3g	0.009	14.0
wumanber	0.001	−18.7
ac-gfbs	<0.001	17.3

In the above, negative seconds indicate shorter running time than the default, and thus, increased performance. The choice of multi pattern algorithm was found to have tremendous affect on performance with mean execution times ranging from fifty-seven seconds with the "wumanber" algorithm to ninety-three seconds with the "ac-gfbs" algorithm. The default choice of "ac" scored near the middle of the scale, with a mean execution time of 75.7.

Figure 4: Multi Pattern Algorithm vs Execution Time

Multi Pattern Algorithm vs Execution Time
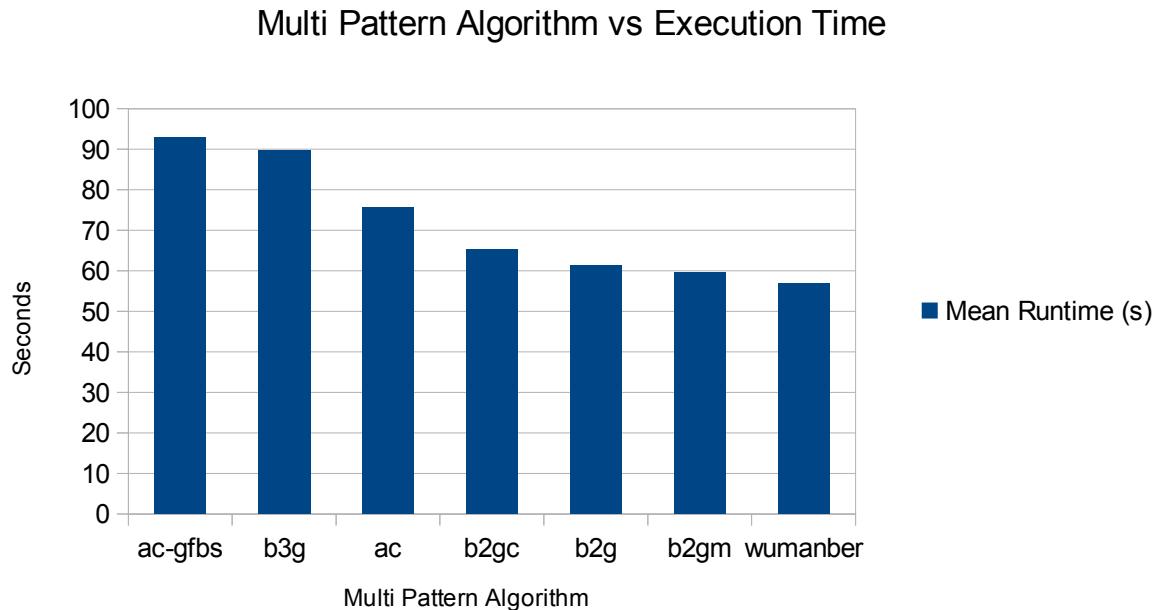
Additionally, three other variables tested were found to have statistically significant effects on performance.

Figure 5: Other Variables Having a Significant Effect on Performance

Configuration Variable	State	p-value	Observed mean difference (s)
CPU Affinity	Enabled	0.040	−2.7
Detect Engine Profile	High	<0.001	−9.7
Detect Engine Profile	Low	<0.001	70.3

CPU Affinity

Enabling CPU Affinity was found to increase performance slightly in the testing environment.

Detection Engine Profile

The choice of detection engine profile had tremendous affect when compared with the default state of "medium," with mean execution times ranging from sixty-seven seconds with the high-performance profile to 147 seconds with the low-performance profile, as shown by the following figure:

Figure 6: Detect Engine Profile vs Performance
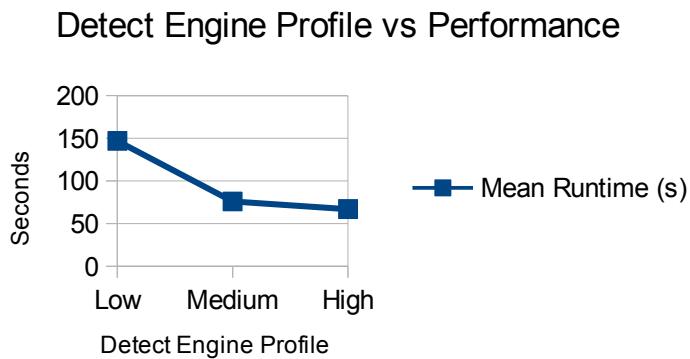
Detection

Detection rates were identical for every configuration tested. Suricata alerted 1350 times for

every configuration against the testing packet capture.

V. Discussion

Suricata Performance

Suricata is very fast. Benchmarking with hdparm -t on this system and drive resulted an average reading speed of 39.2 MB/s. Even with the default settings, Suricata was able to process 955 MB of data in an average of 76.7 seconds or 12.5 MB/s. This is a perfectly acceptable level of performance for my office environment. With an Internet connection speed common to a typical small office, Suricata performance is more than acceptable, even with hardware as old as the 2003-model testing server used for this project. With a Suricata installation positioned at the outer boundary of an office network, Suricata should have no trouble keeping up with demand. Testing for Suricata acceptability in a larger network environment should conducted with more packets on a more appropriate server.

Impact of Configuration Variables

Perhaps the biggest surprise to me in this study was that most configuration variables did not impact performance. However, as many of these variables were chosen for analysis because suspicion of decreased performance, a finding like this one is very useful. The data indicate that the configuration desired for peak detection can be used without fear of negative performance repercussions in many cases. By contrast, it is unsurprising that the choice of algorithm or detect engine profile would have an effect on performance, as the configuration of these variables makes sweeping changes to how Suricata operates. A user seeking to select a profile or algorithm should carefully consider the trade off between performance and detection.

Various CPU affinity configurations are known to cause increased or decreased performance on various hardware. As such, it is recommended for each user to determine CPU affinity impact on his or her hardware before Suricata deployment.

Detection

Although testing the effect of these variables on detection rates was not the primary goal of this study, across every trial, detection remained constant. Further analysis of detection rates for various algorithms is available elsewhere. Because of the fact that detection rates were unaltered by changes to configuration, it may prove most beneficial to seek the fastest-performing Suricata configuration, unless power consumption, or resource sharing with other processes are of higher priority.

Automated Testing

The development of an automated testing system for Suricata was undertaken to simplify the work of data collection. However, this may prove to the greatest contribution of this project. With a testing script, folder hierarchy, and Suricata configuration files, the entire automated testing system can be compressed to a zip file of about five hundred kilobytes without the packet capture file. A line to download the packet capture file with "curl" or "wget" could be added to simplify the procedure. This would allow a systems administrator to pilot test Suricata performance on his or her system with a minimum of knowledge of Suricata required. The testing script can be run overnight and provide useful data in the morning. The addition of lines to output results for detection, speed, and variable tested to a CSV file directly would be trivial and would convert part of the methodology of this project into a single-download "tester's kit" for new Suricata users.

The Suricata project could use this method to increase their knowledge of performance on various systems. The tester's kit could be provided along with a build of Suricata and a capture file by the Suricata project to make performance testing easy enough to be attractive. Adding in a few lines for benchmarking and recording system information, such as was conducted in this

project would likewise be trivial and provide the Suricata project with useful information. All of the output of the tester's kit could be directed to a single compressed file that could then be transmitted back to the development team. The processed but unanalyzed output data of this project can be compressed to a single zip file of only 46.3 kilobytes, including more system information than would be needed.

Future Work

Further testing is needed for several of the components of composite variables. Each of the multi pattern algorithms tested have their own configuration options. The algorithms were tested only with their default options in this project. Likewise, the Detect Engine Profiles can be replaced with custom settings. In this case, finding the ideal custom profile setting should be simplified by being able to start with the data provided by this project for each of the three composite profiles.

Of course, offline packet profiling may not reliably model an online environment. As such, it is important to pilot test Suricata in a live environment before relying on it blindly. Further testing should also take online use into account.

Finally, for my part, I would like to work with the Suricata team to put together the aforementioned "tester's kit" for Suricata. The basic version I produced for this study has been beneficial for choosing a configuration for use at my place of business, and I believe it could be made useful to others with the addition of a small number of functions to simplify the output.

VI. Conclusion

In order for Suricata to become widespread enough in use to make its mark as an IDS, it must be thoroughly tested, both for detection and performance, for as many configurations, environments, and data types as possible. As such, it has been a privilege to undertake a small part of this process in identifying Suricata variables impacting performance in an offline testing setting.

VII. References

"CDX Datasets." ITOC Research. U.S. Army Information Technology and Operations Center, 14

Sept. 2010. Web. 22 Oct. 2011. <http://www.itoc.usma.edu/research/dataset/>.

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<http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?

lang=en&cc=us&taskId=120&prodSeriesId=316558&prodTypeId=15351&

prodSeriesId=316558&objectID=c00409027>.

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2011. <http://www.openinfosecfoundation.org/download/suricata-1.1beta2.tar.gz>.

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<https://www.ohloh.net/p/suricata-engine>.

Appendices

Appendix A: Testing Environment Hardware Information

The following is taken from the output of the "hwinfo" command, when run on the server used

for testing:

```
01: None 00.0: 10105 BIOS
  [Created at bios.190]
  Unique ID: rdCR.lZF+r4EgHp4
  Hardware Class: bios
  BIOS Keyboard LED Status:
    Scroll Lock: off
    Num Lock: off
    Caps Lock: off
  Serial Port 0: 0x3f8
  Base Memory: 637 kB
  MP spec rev 1.4 info:
    OEM id: "COMPAQ"
    Product id: "PROLIANT"
    1 CPUs (0 disabled)
  BIOS32 Service Directory Entry: 0xf0000
  SMBIOS Version: 2.3
  BIOS Info: #0
    Vendor: "HP"
    Version: "P31"
    Date: "11/25/2002"
    Start Address: 0xf0000
    ROM Size: 2048 kB
    Features: 0x0103000000007dc1da80
      PCI supported
      PnP supported
      BIOS flashable
      BIOS shadowing allowed
      ESCD supported
      CD boot supported
      Selectable boot supported
      360kB Floppy supported
      1.2MB Floppy supported
      720kB Floppy supported
      Print Screen supported
      8042 Keyboard Services supported
      Serial Services supported
      Printer Services supported
      CGA/Mono Video supported
      ACPI supported
      USB Legacy supported
      BIOS Boot Spec supported
  System Info: #256
    Manufacturer: "HP"
    Product: "ProLiant DL360 G3"
    UUID: undefined, but settable
    Wake-up: 0x06 (Power Switch)
```

Chassis Info: #768
  Manufacturer: "HP"
  Type: 0x17 (Rack Mount Chassis)
  Bootup State: 0x02 (Unknown)
  Power Supply State: 0x02 (Unknown)
  Thermal State: 0x02 (Unknown)
  Security Status: 0x02 (Unknown)
Processor Info: #1030
  Socket: "Proc 1"
  Socket Type: 0x04 (ZIF Socket)
  Socket Status: Populated
  Type: 0x03 (CPU)
  Family: 0xb3 (Xeon)
  Manufacturer: "Intel"
  Processor ID: 0xbfebfbff00000f27
  Status: 0x01 (Enabled)
  Voltage: 1.5 V
  External Clock: 533 MHz
  Max. Speed: 3600 MHz
  Current Speed: 2800 MHz
  L1 Cache: #1814
  L2 Cache: #1830
  L3 Cache: #1846
Processor Info: #1024
  Socket: "Proc 2"
  Socket Type: 0x04 (ZIF Socket)
  Socket Status: Empty
  Type: 0x03 (CPU)
  Family: 0xb3 (Xeon)
  Manufacturer: "Intel"
  Status: 0x00 (Unknown)
  Voltage: 1.5 V
  External Clock: 533 MHz
  Max. Speed: 3600 MHz
  L1 Cache: #1808
  L2 Cache: #1824
  L3 Cache: #1840
Cache Info: #1814
  Designation: "Processor 1 Internal L1 Cache"
  Level: L1
  State: Enabled
  Mode: 0x01 (Write Back)
  Location: 0x00 (Internal, Not Socketed)
  ECC: 0x02 (Unknown)
  Type: 0x02 (Unknown)
  Associativity: 0x05 (4-way Set-Associative)
  Max. Size: 32 kB
  Current Size: 8 kB
  Supported SRAM Types: 0x0008 (Burst)
  Current SRAM Type: 0x0008 (Burst)
Cache Info: #1808
  Designation: "Processor 2 Internal L1 Cache"
  Level: L1
  State: Disabled
  Mode: 0x03 (Unknown)
  Location: 0x00 (Internal, Not Socketed)

   ECC: 0x02 (Unknown)
   Type: 0x02 (Unknown)
   Associativity: 0x05 (4-way Set-Associative)
   Max. Size: 32 kB
   Supported SRAM Types: 0x0008 (Burst)
   Current SRAM Type: 0x0008 (Burst)
Cache Info: #1830
   Designation: "Processor 1 Internal L2 Cache"
   Level: L2
   State: Enabled
   Mode: 0x01 (Write Back)
   Location: 0x00 (Internal, Not Socketed)
   ECC: 0x02 (Unknown)
   Type: 0x02 (Unknown)
   Associativity: 0x01 (Other)
   Max. Size: 2048 kB
   Current Size: 512 kB
   Supported SRAM Types: 0x0008 (Burst)
   Current SRAM Type: 0x0008 (Burst)
Cache Info: #1824
   Designation: "Processor 2 Internal L2 Cache"
   Level: L2
   State: Disabled
   Mode: 0x03 (Unknown)
   Location: 0x00 (Internal, Not Socketed)
   ECC: 0x02 (Unknown)
   Type: 0x02 (Unknown)
   Associativity: 0x01 (Other)
   Max. Size: 2048 kB
   Supported SRAM Types: 0x0008 (Burst)
   Current SRAM Type: 0x0008 (Burst)
Cache Info: #1846
   Designation: "Processor 1 Internal L3 Cache"
   Level: L3
   State: Enabled
   Mode: 0x01 (Write Back)
   Location: 0x00 (Internal, Not Socketed)
   ECC: 0x02 (Unknown)
   Type: 0x02 (Unknown)
   Associativity: 0x01 (Other)
   Max. Size: 1024 kB
   Supported SRAM Types: 0x0008 (Burst)
   Current SRAM Type: 0x0008 (Burst)
Cache Info: #1840
   Designation: "Processor 2 Internal L3 Cache"
   Level: L3
   State: Disabled
   Mode: 0x03 (Unknown)
   Location: 0x00 (Internal, Not Socketed)
   ECC: 0x02 (Unknown)
   Type: 0x02 (Unknown)
   Associativity: 0x01 (Other)
   Max. Size: 1024 kB
   Supported SRAM Types: 0x0008 (Burst)
   Current SRAM Type: 0x0008 (Burst)
Port Connector: #2049

  Type: 0x10 (USB)
  Internal Designator: "J22"
  Internal Connector: 0x12 (Access Bus [USB])
  External Designator: "USB Port 1"
  External Connector: 0x12 (Access Bus [USB])
Port Connector: #2050
  Type: 0x10 (USB)
  Internal Designator: "J22"
  Internal Connector: 0x12 (Access Bus [USB])
  External Designator: "USB Port 2"
  External Connector: 0x12 (Access Bus [USB])
System Slot: #2305
  Designation: "PCI Slot 1"
  Type: 0x12 (PCI-X)
  Bus Width: 0x06 (64 bit)
  Status: 0x03 (Available)
  Length: 0x04 (Long)
  Slot ID: 1
  Characteristics: 0x0104 (3.3 V, PME#)
System Slot: #2306
  Designation: "PCI Slot 2"
  Type: 0x12 (PCI-X)
  Bus Width: 0x06 (64 bit)
  Status: 0x03 (Available)
  Length: 0x04 (Long)
  Slot ID: 2
  Characteristics: 0x0104 (3.3 V, PME#)
Physical Memory Array: #4096
  Use: 0x03 (System memory)
  Location: 0x03 (Motherboard)
  Slots: 4
  Max. Size: 8 GB
  ECC: 0x05 (Single-bit)
Memory Device: #4352
  Location: "DIMM 01"
  Memory Array: #4096
  Form Factor: 0x09 (DIMM)
  Type: 0x12 (DDR)
  Type Detail: 0x0080 (Synchronous)
  Data Width: 64 bits (+8 ECC bits)
  Size: 256 MB
  Speed: 266 MHz
Memory Device: #4353
  Location: "DIMM 02"
  Memory Array: #4096
  Form Factor: 0x09 (DIMM)
  Type: 0x12 (DDR)
  Type Detail: 0x0080 (Synchronous)
  Data Width: 64 bits (+8 ECC bits)
  Size: 256 MB
  Speed: 266 MHz
Memory Device: #4354
  Location: "DIMM 03"
  Memory Array: #4096
  Form Factor: 0x09 (DIMM)
  Type: 0x12 (DDR)

 Type Detail: 0x0080 (Synchronous)
 Data Width: 64 bits (+8 ECC bits)
 Size: 1 GB
 Speed: 266 MHz
Memory Device: #4355
 Location: "DIMM 04"
 Memory Array: #4096
 Form Factor: 0x09 (DIMM)
 Type: 0x12 (DDR)
 Type Detail: 0x0080 (Synchronous)
 Data Width: 64 bits (+8 ECC bits)
 Size: 1 GB
 Speed: 266 MHz
Memory Array Mapping: #4864
 Memory Array: #4096
 Partition Width: 2
 Start Address: 0x00000000
 End Address: 0xa0000000
Memory Device Mapping: #5120
 Memory Device: #4352
 Array Mapping: #4864
 Row: 1
 Interleave Pos: 1
 Interleaved Depth: 2
 Start Address: 0x00000000
 End Address: 0x20000000
Memory Device Mapping: #5121
 Memory Device: #4353
 Array Mapping: #4864
 Row: 1
 Interleave Pos: 2
 Interleaved Depth: 2
 Start Address: 0x00000000
 End Address: 0x20000000
Memory Device Mapping: #5122
 Memory Device: #4354
 Array Mapping: #4864
 Row: 1
 Interleave Pos: 1
 Interleaved Depth: 2
 Start Address: 0x20000000
 End Address: 0xa0000000
Memory Device Mapping: #5123
 Memory Device: #4355
 Array Mapping: #4864
 Row: 1
 Interleave Pos: 2
 Interleaved Depth: 2
 Start Address: 0x20000000
 End Address: 0xa0000000
Memory Device Mapping: #5200
 Memory Device: #0
 Array Mapping: #0
 Row: 1
 Interleave Pos: 1
 Interleaved Depth: 2

    Start Address: 0x00000000
    End Address: 0x00000400
  Memory Device Mapping: #5201
    Memory Device: #0
    Array Mapping: #0
    Row: 1
    Interleave Pos: 2
    Interleaved Depth: 2
    Start Address: 0x00000000
    End Address: 0x00000400
  Type 32 Record: #8192
    Data 00: 20 0b 00 20 00 00 00 00 00 00 00
  Type 193 Record: #49408
    Data 00: c1 07 00 c1 01 01 02
    String 1: "11/25/2002"
    String 2: "10/25/2002"
  Type 194 Record: #49664
    Data 00: c2 05 00 c2 09
  Type 195 Record: #49920
    Data 00: c3 05 00 c3 01
    String 1: "$0E110733"
  Type 196 Record: #50176
    Data 00: c4 05 00 c4 00
  Type 197 Record: #50438
    Data 00: c5 0a 06 c5 06 04 06 01 ff 01
  Type 197 Record: #50432
    Data 00: c5 0a 00 c5 00 04 00 00 ff 02
  Type 198 Record: #50688
    Data 00: c6 0a 00 c6 17 00 00 01 3c 00
  Type 199 Record: #50944
    Data 00: c7 10 00 c7 28 00 00 00 02 20 22 07 27 0f 00 00
  Type 205 Record: #52480
    Data 00: cd 16 00 cd 01 01 46 41 54 78 00 00 f1 ff 00 00
    Data 10: 00 00 00 80 02 00
  Type 202 Record: #51712
    Data 00: ca 08 00 ca 00 11 ff 01
  Type 202 Record: #51713
    Data 00: ca 08 01 ca 01 11 ff 02
  Type 202 Record: #51714
    Data 00: ca 08 02 ca 02 11 ff 03
  Type 202 Record: #51715
    Data 00: ca 08 03 ca 03 11 ff 04
  Config Status: cfg=new, avail=yes, need=no, active=unknown

02: None 00.0: 10107 System
  [Created at sys.63]
  Unique ID: rdCR.n_7QNeEnh23
  Hardware Class: system
  Model: "System"
  Driver Info #0:
    Driver Status: thermal,fan are not active
    Driver Activation Cmd: "modprobe thermal; modprobe fan"
  Config Status: cfg=new, avail=yes, need=no, active=unknown

03: None 00.0: 10104 FPU
  [Created at misc.192]

Unique ID: rdCR.EMpH5pjcahD
Hardware Class: unknown
Model: "FPU"
I/O Ports: 0xf0-0xff (rw)
Config Status: cfg=new, avail=yes, need=no, active=unknown

04: None 00.0: 0801 DMA controller (8237)
 [Created at misc.206]
 Unique ID: rdCR.f5u1ucRm+H9
 Hardware Class: unknown
 Model: "DMA controller"
 I/O Ports: 0x00-0x1f (rw)
 I/O Ports: 0xc0-0xdf (rw)
 I/O Ports: 0x80-0x8f (rw)
 DMA: 4
 Config Status: cfg=new, avail=yes, need=no, active=unknown

05: None 00.0: 0800 PIC (8259)
 [Created at misc.219]
 Unique ID: rdCR.8uRK7LxiIA2
 Hardware Class: unknown
 Model: "PIC"
 I/O Ports: 0x20-0x21 (rw)
 I/O Ports: 0xa0-0xa1 (rw)
 Config Status: cfg=new, avail=yes, need=no, active=unknown

06: None 00.0: 0802 Timer (8254)
 [Created at misc.230]
 Unique ID: rdCR.AJKleuxpiP0
 Hardware Class: unknown
 Model: "Timer"
 IRQ: 0 (45 events)
 Config Status: cfg=new, avail=yes, need=no, active=unknown

07: None 00.0: 0900 Keyboard controller
 [Created at misc.251]
 Unique ID: rdCR.9N+EecqykME
 Hardware Class: unknown
 Model: "Keyboard controller"
 I/O Port: 0x60 (rw)
 I/O Port: 0x64 (rw)
 Config Status: cfg=new, avail=yes, need=no, active=unknown

08: None 00.0: 0102 Floppy disk controller
 [Created at misc.282]
 Unique ID: rdCR.3wRL2_g4d2B
 Hardware Class: storage
 Model: "Floppy disk controller"
 I/O Port: 0x3f2 (rw)
 I/O Ports: 0x3f4-0x3f5 (rw)
 I/O Port: 0x3f7 (rw)
 DMA: 2
 IRQ: 6 (3 events)
 Config Status: cfg=new, avail=yes, need=no, active=unknown

09: None 00.0: 10400 PS/2 Controller

[Created at misc.304]
 Unique ID: rdCR.DziBbWO85o5
 Hardware Class: unknown
 Model: "PS/2 Controller"
 Config Status: cfg=new, avail=yes, need=no, active=unknown

12: None 00.0: 10102 Main Memory
 [Created at memory.61]
 Unique ID: rdCR.CxwsZFjVASF
 Hardware Class: memory
 Model: "Main Memory"
 Memory Range: 0x00000000-0x9e5dcfff (rw)
 Memory Size: 2 GB + 512 MB
 Config Status: cfg=new, avail=yes, need=no, active=unknown

13: PCI 00.0: 0600 Host bridge
 [Created at pci.318]
 Unique ID: qLht.i4jhOuRE9m1
 SysFS ID: /devices/pci0000:00/0000:00:00.0
 SysFS BusID: 0000:00:00.0
 Hardware Class: bridge
 Model: "Broadcom CMIC-LE Host Bridge (GC-LE chipset)"
 Vendor: pci 0x1166 "Broadcom"
 Device: pci 0x0014 "CMIC-LE Host Bridge (GC-LE chipset)"
 Revision: 0x31
 Module Alias: "pci:v00001166d00000014sv00000000sd00000000bc06sc00i00"
 Config Status: cfg=new, avail=yes, need=no, active=unknown

14: PCI 00.1: 0600 Host bridge
 [Created at pci.318]
 Unique ID: hgAj.RtTaX7M9845
 SysFS ID: /devices/pci0000:00/0000:00:00.1
 SysFS BusID: 0000:00:00.1
 Hardware Class: bridge
 Model: "Broadcom CMIC-LE Host Bridge (GC-LE chipset)"
 Vendor: pci 0x1166 "Broadcom"
 Device: pci 0x0014 "CMIC-LE Host Bridge (GC-LE chipset)"
 Module Alias: "pci:v00001166d00000014sv00000000sd00000000bc06sc00i00"
 Config Status: cfg=new, avail=yes, need=no, active=unknown

15: PCI 00.2: 0600 Host bridge
 [Created at pci.318]
 Unique ID: Z+fY.RtTaX7M9845
 SysFS ID: /devices/pci0000:00/0000:00:00.2
 SysFS BusID: 0000:00:00.2
 Hardware Class: bridge
 Model: "Broadcom CMIC-LE Host Bridge (GC-LE chipset)"
 Vendor: pci 0x1166 "Broadcom"
 Device: pci 0x0014 "CMIC-LE Host Bridge (GC-LE chipset)"
 Module Alias: "pci:v00001166d00000014sv00000000sd00000000bc06sc00i00"
 Config Status: cfg=new, avail=yes, need=no, active=unknown

16: PCI 03.0: 0300 VGA compatible controller (VGA)
 [Created at pci.318]
 Unique ID: 3hqH._491pQ4ccB3
 SysFS ID: /devices/pci0000:00/0000:00:03.0

SysFS BusID: 0000:00:03.0
Hardware Class: graphics card
Model: "Compaq Proliant Rage XL"
Vendor: pci 0x1002 "ATI Technologies Inc"
Device: pci 0x4752 "Mach64 GR"
SubVendor: pci 0x0e11 "Compaq Computer Corporation"
SubDevice: pci 0x001e "Proliant Rage XL"
Revision: 0x27
Memory Range: 0xf6000000-0xf6ffffff (rw,non-prefetchable)
I/O Ports: 0x2400-0x24ff (rw)
Memory Range: 0xf5ff0000-0xf5ff0fff (rw,non-prefetchable)
Memory Range: 0xa0000000-0xa001ffff (ro,prefetchable,disabled)
I/O Ports: 0x3c0-0x3df (rw)
Module Alias: "pci:v00001002d00004752sv00000E11sd0000001Ebc03sc00i00"
Driver Info #0:
  XFree86 v4 Server Module: ati
  XF86Config Entry: Option "XaaNoPixmapCache" "on"
Config Status: cfg=new, avail=yes, need=no, active=unknown

17: PCI 04.0: 0104 RAID bus controller
 [Created at pci.318]
 Unique ID: 8otl.PVlfEe9bB26
 SysFS ID: /devices/pci0000:00/0000:00:04.0
 SysFS BusID: 0000:00:04.0
 Hardware Class: storage
 Model: "Compaq Smart Array 5i"
 Vendor: pci 0x0e11 "Compaq Computer Corporation"
 Device: pci 0xb178 "Smart Array 5i/532"
 SubVendor: pci 0x0e11 "Compaq Computer Corporation"
 SubDevice: pci 0x4080 "Smart Array 5i"
 Revision: 0x01
 Driver: "cciss"
 Driver Modules: "cciss"
 Memory Range: 0xf5f80000-0xf5fbffff (rw,non-prefetchable)
 I/O Ports: 0x2800-0x28ff (rw)
 Memory Range: 0xf5df0000-0xf5df3fff (rw,prefetchable)
 Memory Range: 0xa0030000-0xa0033fff (ro,prefetchable,disabled)
 IRQ: 31 (212539 events)
 Module Alias: "pci:v00000E11d0000B178sv00000E11sd00004080bc01sc04i00"
 Driver Info #0:
  Driver Status: cciss is active
  Driver Activation Cmd: "modprobe cciss"
 Config Status: cfg=new, avail=yes, need=no, active=unknown

18: PCI 05.0: 0880 System peripheral
 [Created at pci.318]
 Unique ID: CvwD.uy0AX3Xm6sE
 SysFS ID: /devices/pci0000:00/0000:00:05.0
 SysFS BusID: 0000:00:05.0
 Hardware Class: unknown
 Model: "Compaq Integrated Lights Out Controller"
 Vendor: pci 0x0e11 "Compaq Computer Corporation"
 Device: pci 0xb203 "Integrated Lights Out Controller"
 SubVendor: pci 0x0e11 "Compaq Computer Corporation"
 SubDevice: pci 0xb206
 Revision: 0x01

I/O Ports: 0x1800-0x18ff (rw)
Memory Range: 0xf5f70000-0xf5f701ff (rw,non-prefetchable)
IRQ: 5 (no events)
Module Alias: "pci:v00000E11d0000B203sv00000E11sd0000B206bc08sc80i00"
Driver Info #0:
  Driver Status: hpwdt is active
  Driver Activation Cmd: "modprobe hpwdt"
Config Status: cfg=new, avail=yes, need=no, active=unknown

19: PCI 05.2: 0880 System peripheral
 [Created at pci.318]
 Unique ID: xYvu.PNzv+deTeEF
 SysFS ID: /devices/pci0000:00/0000:00:05.2
 SysFS BusID: 0000:00:05.2
 Hardware Class: unknown
 Model: "Compaq Integrated Lights Out Processor"
 Vendor: pci 0x0e11 "Compaq Computer Corporation"
 Device: pci 0xb204 "Integrated Lights Out Processor"
 SubVendor: pci 0x0e11 "Compaq Computer Corporation"
 SubDevice: pci 0xb206
 Revision: 0x01
 Driver: "hpilo"
 Driver Modules: "hpilo"
 I/O Ports: 0x2c00-0x2cff (rw)
 Memory Range: 0xf5f60000-0xf5f607ff (rw,non-prefetchable)
 Memory Range: 0xf5f50000-0xf5f51fff (rw,non-prefetchable)
 Memory Range: 0xf5e80000-0xf5effff (rw,non-prefetchable)
 Memory Range: 0xa0020000-0xa002ffff (ro,prefetchable,disabled)
 IRQ: 22 (no events)
 Module Alias: "pci:v00000E11d0000B204sv00000E11sd0000B206bc08sc80i00"
 Driver Info #0:
  Driver Status: hpilo is active
  Driver Activation Cmd: "modprobe hpilo"
 Config Status: cfg=new, avail=yes, need=no, active=unknown

20: PCI 0f.0: 0601 ISA bridge
 [Created at pci.318]
 Unique ID: _+Pw.21bOIcZYITD
 SysFS ID: /devices/pci0000:00/0000:00:0f.0
 SysFS BusID: 0000:00:0f.0
 Hardware Class: bridge
 Model: "Broadcom CSB5 South Bridge"
 Vendor: pci 0x1166 "Broadcom"
 Device: pci 0x0201 "CSB5 South Bridge"
 SubVendor: pci 0x1166 "Broadcom"
 SubDevice: pci 0x0201
 Revision: 0x93
 Driver: "piix4_smbus"
 Driver Modules: "i2c_piix4"
 Module Alias: "pci:v00001166d00000201sv00001166sd00000201bc06sc01i00"
 Driver Info #0:
  Driver Status: i2c_piix4 is active
  Driver Activation Cmd: "modprobe i2c_piix4"
 Config Status: cfg=new, avail=yes, need=no, active=unknown

21: PCI 0f.1: 0101 IDE interface

[Created at pci.318]
Unique ID: rKvl.f2sHK1tVWsE
SysFS ID: /devices/pci0000:00/0000:00:0f.1
SysFS BusID: 0000:00:0f.1
Hardware Class: storage
Model: "Broadcom CSB5 IDE Controller"
Vendor: pci 0x1166 "Broadcom"
Device: pci 0x0212 "CSB5 IDE Controller"
SubVendor: pci 0x1166 "Broadcom"
SubDevice: pci 0x0212
Revision: 0x93
Driver: "pata_serverworks"
Driver Modules: "pata_serverworks"
I/O Ports: 0x1f0-0x1f7 (rw)
I/O Port: 0x3f6 (rw)
I/O Ports: 0x170-0x177 (rw)
I/O Port: 0x376 (rw)
I/O Ports: 0x2000-0x200f (rw)
Module Alias: "pci:v00001166d00000212sv00001166sd00000212bc01sc01i8a"
Driver Info #0:
  Driver Status: pata_serverworks is active
  Driver Activation Cmd: "modprobe pata_serverworks"
Driver Info #1:
  Driver Status: ata_generic is active
  Driver Activation Cmd: "modprobe ata_generic"
Config Status: cfg=new, avail=yes, need=no, active=unknown

22: PCI 0f.2: 0c03 USB Controller (OHCI)
  [Created at pci.318]
  Unique ID: ifOb.AqD3D_jUvp1
  SysFS ID: /devices/pci0000:00/0000:00:0f.2
  SysFS BusID: 0000:00:0f.2
  Hardware Class: usb controller
  Model: "Broadcom OSB4/CSB5 OHCI USB Controller"
  Vendor: pci 0x1166 "Broadcom"
  Device: pci 0x0220 "OSB4/CSB5 OHCI USB Controller"
  SubVendor: pci 0x1166 "Broadcom"
  SubDevice: pci 0x0220
  Revision: 0x05
  Driver: "ohci_hcd"
  Driver Modules: "ohci_hcd"
  Memory Range: 0xf5e70000-0xf5e70fff (rw,non-prefetchable)
  IRQ: 10 (no events)
  Module Alias: "pci:v00001166d00000220sv00001166sd00000220bc0Csc03i10"
  Driver Info #0:
    Driver Status: ohci-hcd is active
    Driver Activation Cmd: "modprobe ohci-hcd"
  Config Status: cfg=new, avail=yes, need=no, active=unknown

23: PCI 0f.3: 0600 Host bridge
  [Created at pci.318]
  Unique ID: a_tQ.X72azULoN+B
  SysFS ID: /devices/pci0000:00/0000:00:0f.3
  SysFS BusID: 0000:00:0f.3
  Hardware Class: bridge
  Model: "Broadcom CSB5 LPC bridge"

  Vendor: pci 0x1166 "Broadcom"
  Device: pci 0x0225 "CSB5 LPC bridge"
  SubVendor: pci 0x1166 "Broadcom"
  SubDevice: pci 0x0230 "Dell PowerEdge 1650/1750"
  Module Alias: "pci:v00001166d00000225sv00001166sd00000230bc06sc00i00"
  Config Status: cfg=new, avail=yes, need=no, active=unknown

24: PCI 11.0: 0600 Host bridge
  [Created at pci.318]
  Unique ID: 7EWs.sUx0X7KENZ8
  SysFS ID: /devices/pci0000:00/0000:00:11.0
  SysFS BusID: 0000:00:11.0
  Hardware Class: bridge
  Model: "Broadcom CIOB-X2 PCI-X I/O Bridge"
  Vendor: pci 0x1166 "Broadcom"
  Device: pci 0x0101 "CIOB-X2 PCI-X I/O Bridge"
  Revision: 0x05
  Module Alias: "pci:v00001166d00000101sv00000000sd00000000bc06sc00i00"
  Config Status: cfg=new, avail=yes, need=no, active=unknown

25: PCI 11.2: 0600 Host bridge
  [Created at pci.318]
  Unique ID: stUX.sUx0X7KENZ8
  SysFS ID: /devices/pci0000:00/0000:00:11.2
  SysFS BusID: 0000:00:11.2
  Hardware Class: bridge
  Model: "Broadcom CIOB-X2 PCI-X I/O Bridge"
  Vendor: pci 0x1166 "Broadcom"
  Device: pci 0x0101 "CIOB-X2 PCI-X I/O Bridge"
  Revision: 0x05
  Module Alias: "pci:v00001166d00000101sv00000000sd00000000bc06sc00i00"
  Config Status: cfg=new, avail=yes, need=no, active=unknown

26: PCI 102.0: 0200 Ethernet controller
  [Created at pci.318]
  Unique ID: rBUF.dR48ZsvS6aD
  SysFS ID: /devices/pci0000:01/0000:01:02.0
  SysFS BusID: 0000:01:02.0
  Hardware Class: network
  Model: "Compaq NC7781 Gigabit Server Adapter (PCI-X, 10,100,1000-T)"
  Vendor: pci 0x14e4 "Broadcom"
  Device: pci 0x16a7 "NetXtreme BCM5703X Gigabit Ethernet"
  SubVendor: pci 0x0e11 "Compaq Computer Corporation"
  SubDevice: pci 0x00cb "NC7781 Gigabit Server Adapter (PCI-X, 10,100,1000-T)"
  Revision: 0x02
  Driver: "tg3"
  Driver Modules: "tg3"
  Device File: eth0
  Memory Range: 0xf7ef0000-0xf7efffff (rw,non-prefetchable)
  Memory Range: 0xa0040000-0xa004ffff (ro,prefetchable,disabled)
  IRQ: 30 (19801 events)
  HW Address: 00:08:02:a0:31:4b
  Link detected: yes
  Module Alias: "pci:v000014E4d000016A7sv00000E11sd000000CBbc02sc00i00"
  Driver Info #0:
    Driver Status: tg3 is active

Driver Activation Cmd: "modprobe tg3"
Config Status: cfg=new, avail=yes, need=no, active=unknown

27: PCI 402.0: 0200 Ethernet controller
  [Created at pci.318]
  Unique ID: JNkJ.dR48ZsvS6aD
  SysFS ID: /devices/pci0000:04/0000:04:02.0
  SysFS BusID: 0000:04:02.0
  Hardware Class: network
  Model: "Compaq NC7781 Gigabit Server Adapter (PCI-X, 10,100,1000-T)"
  Vendor: pci 0x14e4 "Broadcom"
  Device: pci 0x16a7 "NetXtreme BCM5703X Gigabit Ethernet"
  SubVendor: pci 0x0e11 "Compaq Computer Corporation"
  SubDevice: pci 0x00cb "NC7781 Gigabit Server Adapter (PCI-X, 10,100,1000-T)"
  Revision: 0x02
  Driver: "tg3"
  Driver Modules: "tg3"
  Device File: eth1
  Memory Range: 0xf7ff0000-0xf7ffffff (rw,non-prefetchable)
  Memory Range: 0xa0050000-0xa005ffff (ro,prefetchable,disabled)
  IRQ: 29 (1 event)
  HW Address: 00:08:02:a0:30:d9
  Link detected: no
  Module Alias: "pci:v000014E4d000016A7sv00000E11sd000000CBbc02sc00i00"
  Driver Info #0:
    Driver Status: tg3 is active
    Driver Activation Cmd: "modprobe tg3"
  Config Status: cfg=new, avail=yes, need=no, active=unknown

28: ISA(PnP) 00.0: 0000 Unclassified device
  [Created at isapnp.142]
  Unique ID: z9pp.QBqTp8zQt87
  SysFS ID: /devices/pnp0/00:00
  SysFS BusID: 00:00
  Hardware Class: unknown
  Model: "Unclassified device"
  SubVendor: PNP "PnP"
  SubDevice: eisa 0x0a03
  Config Status: cfg=new, avail=yes, need=no, active=unknown

29: ISA(PnP) 00.0: 0000 Unclassified device
  [Created at isapnp.142]
  Unique ID: QL3u.B+yZ9Ve8gC1
  SysFS ID: /devices/pnp0/00:01
  SysFS BusID: 00:01
  Hardware Class: unknown
  Model: "Unclassified device"
  SubVendor: PNP "PnP"
  SubDevice: eisa 0x0c02
  Config Status: cfg=new, avail=yes, need=no, active=unknown

30: ISA(PnP) 00.0: 0000 Unclassified device
  [Created at isapnp.142]
  Unique ID: tWJy.ld94kxNGZf5
  SysFS ID: /devices/pnp0/00:02
  SysFS BusID: 00:02

 Hardware Class: unknown
 Model: "Unclassified device"
 SubVendor: PNP "PnP"
 SubDevice: eisa 0x0200
 Config Status: cfg=new, avail=yes, need=no, active=unknown

31: ISA(PnP) 00.0: 0000 Unclassified device
 [Created at isapnp.142]
 Unique ID: KiZ0.bvKf3UMzZfE
 SysFS ID: /devices/pnp0/00:03
 SysFS BusID: 00:03
 Hardware Class: unknown
 Model: "Unclassified device"
 SubVendor: PNP "PnP"
 SubDevice: eisa 0x0800
 Config Status: cfg=new, avail=yes, need=no, active=unknown

32: ISA(PnP) 00.0: 0000 Unclassified device
 [Created at isapnp.142]
 Unique ID: ntp4.xhndlW9HXJ7
 SysFS ID: /devices/pnp0/00:04
 SysFS BusID: 00:04
 Hardware Class: unknown
 Model: "Unclassified device"
 SubVendor: PNP "PnP"
 SubDevice: eisa 0x0303
 Config Status: cfg=new, avail=yes, need=no, active=unknown

33: ISA(PnP) 00.0: 0000 Unclassified device
 [Created at isapnp.142]
 Unique ID: E349.t7Yh1tpgb13
 SysFS ID: /devices/pnp0/00:05
 SysFS BusID: 00:05
 Hardware Class: unknown
 Model: "Unclassified device"
 SubVendor: PNP "PnP"
 SubDevice: eisa 0x0f13
 Config Status: cfg=new, avail=yes, need=no, active=unknown

34: ISA(PnP) 00.0: 0000 Unclassified device
 [Created at isapnp.142]
 Unique ID: hEKD.z1bm6ev_Vz1
 SysFS ID: /devices/pnp0/00:06
 SysFS BusID: 00:06
 Hardware Class: unknown
 Model: "Unclassified device"
 SubVendor: PNP "PnP"
 SubDevice: eisa 0x0a06
 Config Status: cfg=new, avail=yes, need=no, active=unknown

35: ISA(PnP) 00.0: 0000 Unclassified device
 [Created at isapnp.142]
 Unique ID: NhVi.BuKI+1soRmD
 SysFS ID: /devices/pnp0/00:07
 SysFS BusID: 00:07
 Hardware Class: unknown

Model: "Unclassified device"
SubVendor: PNP "PnP"
SubDevice: eisa 0x0501
Config Status: cfg=new, avail=yes, need=no, active=unknown

36: ISA(PnP) 00.0: 0000 Unclassified device
  [Created at isapnp.142]
  Unique ID: qslm.yhTOLOXWEq7
  SysFS ID: /devices/pnp0/00:08
  SysFS BusID: 00:08
  Hardware Class: unknown
  Model: "Unclassified device"
  SubVendor: PNP "PnP"
  SubDevice: eisa 0x0700
  Config Status: cfg=new, avail=yes, need=no, active=unknown

37: ISA(PnP) 00.0: 0000 Unclassified device
  [Created at isapnp.142]
  Unique ID: H20r.QBqTp8zQt87
  SysFS ID: /devices/pnp0/00:09
  SysFS BusID: 00:09
  Hardware Class: unknown
  Model: "Unclassified device"
  SubVendor: PNP "PnP"
  SubDevice: eisa 0x0a03
  Config Status: cfg=new, avail=yes, need=no, active=unknown

38: ISA(PnP) 00.0: 0000 Unclassified device
  [Created at isapnp.142]
  Unique ID: iT2w.QBqTp8zQt87
  SysFS ID: /devices/pnp0/00:0a
  SysFS BusID: 00:0a
  Hardware Class: unknown
  Model: "Unclassified device"
  SubVendor: PNP "PnP"
  SubDevice: eisa 0x0a03
  Config Status: cfg=new, avail=yes, need=no, active=unknown

39: None 00.0: 0700 Serial controller (16550)
  [Created at serial.74]
  Unique ID: S_Uw.3fyvFV+mbWD
  Hardware Class: unknown
  Model: "16550A"
  Device: "16550A"
  Device File: /dev/ttyS0
  Device Files: /dev/ttyS0, /dev/char/4:64
  I/O Ports: 0x3f8-0x3ff (rw)
  IRQ: 4 (1 event)
  Config Status: cfg=new, avail=yes, need=no, active=unknown

40: None 00.0: 10600 Disk
  [Created at block.243]
  Unique ID: ZJ2m.Fxp0d3BezAE
  Parent ID: 8otl.PVlfEe9bB26
  SysFS ID: /class/block/cciss!c0d0
  SysFS BusID: c0d0

SysFS Device Link: /devices/pci0000:00/0000:00:04.0/cciss0/c0d0
 Hardware Class: disk
 Model: "Disk"
 Driver: "cciss"
 Driver Modules: "cciss"
 Device File: /dev/cciss/c0d0
 Device Files: /dev/cciss/c0d0, /dev/block/104:0, /dev/disk/by-id/cciss-
3600508b10018443953534936324d0007, /dev/disk/by-id/wwn-0x600508b100184439, /dev/disk/by-
path/pci-0000:00:04.0
 Device Number: block 104:0-104:15
 BIOS id: 0x80
 Geometry (Logical): CHS 8716/255/32
 Size: 71122560 sectors a 512 bytes
 Config Status: cfg=new, avail=yes, need=no, active=unknown
 Attached to: #17 (RAID bus controller)

41: None 00.0: 11300 Partition
 [Created at block.412]
 Unique ID: RUjZ.SE1wIdpsiiC
 Parent ID: ZJ2m.Fxp0d3BezAE
 SysFS ID: /class/block/cciss!c0d0/cciss!c0d0p1
 Hardware Class: partition
 Model: "Partition"
 Device File: /dev/cciss/c0d0p1
 Device Files: /dev/cciss/c0d0p1, /dev/block/104:1, /dev/disk/by-id/cciss-
3600508b10018443953534936324d0007-part1, /dev/disk/by-id/wwn-0x600508b100184439-part1,
/dev/disk/by-path/pci-0000:00:04.0-part1, /dev/disk/by-uuid/9719c621-ffda-4fae-aece-64a74f8500ac,
/dev/root
 Config Status: cfg=new, avail=yes, need=no, active=unknown
 Attached to: #40 (Disk)

42: None 00.0: 11300 Partition
 [Created at block.412]
 Unique ID: ufzd.SE1wIdpsiiC
 Parent ID: ZJ2m.Fxp0d3BezAE
 SysFS ID: /class/block/cciss!c0d0/cciss!c0d0p2
 Hardware Class: partition
 Model: "Partition"
 Device File: /dev/cciss/c0d0p2
 Device Files: /dev/cciss/c0d0p2, /dev/block/104:2, /dev/disk/by-id/cciss-
3600508b10018443953534936324d0007-part2, /dev/disk/by-id/wwn-0x600508b100184439-part2,
/dev/disk/by-path/pci-0000:00:04.0-part2
 Config Status: cfg=new, avail=yes, need=no, active=unknown
 Attached to: #40 (Disk)

43: None 00.0: 11300 Partition
 [Created at block.412]
 Unique ID: GCkq.SE1wIdpsiiC
 Parent ID: ZJ2m.Fxp0d3BezAE
 SysFS ID: /class/block/cciss!c0d0/cciss!c0d0p5
 Hardware Class: partition
 Model: "Partition"
 Device File: /dev/cciss/c0d0p5
 Device Files: /dev/cciss/c0d0p5, /dev/block/104:5, /dev/disk/by-id/cciss-
3600508b10018443953534936324d0007-part5, /dev/disk/by-id/wwn-0x600508b100184439-part5,
/dev/disk/by-path/pci-0000:00:04.0-part5, /dev/disk/by-uuid/2c6f153b-01e3-4e5e-bbcf-3b1817c401fb

Config Status: cfg=new, avail=yes, need=no, active=unknown
Attached to: #40 (Disk)

44: SCSI 00.0: 10602 CD-ROM
  [Created at block.247]
  Unique ID: KD9E.la1YSLcOKQC
  Parent ID: rKvl.f2sHK1tVWsE
  SysFS ID: /class/block/sr0
  SysFS BusID: 0:0:0:0
  SysFS Device Link: /devices/pci0000:00/0000:00:0f.1/host0/target0:0:0/0:0:0:0
  Hardware Class: cdrom
  Model: "COMPAQ CRN-8245B"
  Vendor: "COMPAQ"
  Device: "CRN-8245B"
  Revision: "2.19"
  Driver: "pata_serverworks", "sr"
  Driver Modules: "pata_serverworks"
  Device File: /dev/sr0 (/dev/sg0)
  Device Files: /dev/sr0, /dev/block/11:0, /dev/scd0, /dev/disk/by-path/pci-0000:00:0f.1-scsi-0:0:0:0,
/dev/cdrom
  Device Number: block 11:0 (char 21:0)
  Drive status: no medium
  Config Status: cfg=new, avail=yes, need=no, active=unknown
  Attached to: #21 (IDE interface)
  Drive Speed: 24

45: USB 00.0: 10a00 Hub
  [Created at usb.122]
  Unique ID: k4bc.4SMt+yGoEp4
  Parent ID: ifOb.AqD3D_jUvp1
  SysFS ID: /devices/pci0000:00/0000:00:0f.2/usb1/1-0:1.0
  SysFS BusID: 1-0:1.0
  Hardware Class: hub
  Model: "Linux 2.6.32-5-686 ohci_hcd OHCI Host Controller"
  Hotplug: USB
  Vendor: usb 0x1d6b "Linux 2.6.32-5-686 ohci_hcd"
  Device: usb 0x0001 "OHCI Host Controller"
  Revision: "2.06"
  Serial ID: "0000:00:0f.2"
  Driver: "hub"
  Driver Modules: "usbcore"
  Speed: 12 Mbps
  Module Alias: "usb:v1D6Bp0001d0206dc09dsc00dp00ic09isc00ip00"
  Driver Info #0:
    Driver Status: usbcore is active
    Driver Activation Cmd: "modprobe usbcore"
  Config Status: cfg=new, avail=yes, need=no, active=unknown
  Attached to: #22 (USB Controller)

46: PS/2 00.0: 10800 Keyboard
  [Created at input.161]
  Unique ID: nLyy.+49ps10DtUF
  Hardware Class: keyboard
  Model: "AT Translated Set 2 keyboard"
  Vendor: 0x0001
  Device: 0x0001 "AT Translated Set 2 keyboard"

Compatible to: int 0x0211 0x0001
Device File: /dev/input/event0
Device Files: /dev/input/event0, /dev/char/13:64, /dev/input/by-path/platform-i8042-serio-0-event-kbd
Device Number: char 13:64
Driver Info #0:
  XkbRules: xfree86
  XkbModel: pc104
Config Status: cfg=new, avail=yes, need=no, active=unknown

47: PS/2 00.0: 10500 PS/2 Mouse
 [Created at input.183]
 Unique ID: AH6Q.bGO0sOimOM3
 Hardware Class: mouse
 Model: "ImExPS/2 Generic Explorer Mouse"
 Vendor: 0x0002
 Device: 0x0006 "ImExPS/2 Generic Explorer Mouse"
 Compatible to: int 0x0210 0x0025
 Device File: /dev/input/mice (/dev/input/mouse0)
 Device Files: /dev/input/mice, /dev/input/mouse0, /dev/input/event3, /dev/char/13:67, /dev/input/by-path/platform-i8042-serio-1-event-mouse, /dev/char/13:32, /dev/input/by-path/platform-i8042-serio-1-mouse, /dev/char/13:63
 Device Number: char 13:63 (char 13:32)
 Driver Info #0:
   Buttons: 5
   Wheels: 2
   XFree86 Protocol: explorerps/2
   GPM Protocol: exps2
 Config Status: cfg=new, avail=yes, need=no, active=unknown

48: None 00.0: 10103 CPU
 [Created at cpu.304]
 Unique ID: rdCR.j8NaKXDZtZ6
 Hardware Class: cpu
 Arch: Intel
 Vendor: "GenuineIntel"
 Model: 15.2.7 "Intel(R) Xeon(TM) CPU 2.80GHz"
 Features:
fpu,vme,de,pse,tsc,msr,pae,mce,cx8,apic,sep,mtrr,pge,mca,cmov,pat,pse36,clflush,dts,acpi,mmx,fxsr,sse,sse2,ss,ht,tm,pbe,pebs,bts,cid
 Clock: 2800 MHz
 BogoMips: 5597.21
 Cache: 512 kb
 Units/Processor: 2
 Config Status: cfg=new, avail=yes, need=no, active=unknown

49: None 01.0: 10103 CPU
 [Created at cpu.304]
 Unique ID: wkFv.j8NaKXDZtZ6
 Hardware Class: cpu
 Arch: Intel
 Vendor: "GenuineIntel"
 Model: 15.2.7 "Intel(R) Xeon(TM) CPU 2.80GHz"
 Features:
fpu,vme,de,pse,tsc,msr,pae,mce,cx8,apic,sep,mtrr,pge,mca,cmov,pat,pse36,clflush,dts,acpi,mmx,fxsr,sse,sse2,ss,ht,tm,pbe,pebs,bts,cid
 Clock: 2800 MHz

BogoMips: 5598.68
Cache: 512 kb
Units/Processor: 2
Config Status: cfg=new, avail=yes, need=no, active=unknown

50: None 00.0: 10700 Loopback
 [Created at net.124]
 Unique ID: ZsBS.GQNx7L4uPNA
 SysFS ID: /class/net/lo
 Hardware Class: network interface
 Model: "Loopback network interface"
 Device File: lo
 Link detected: yes
 Config Status: cfg=new, avail=yes, need=no, active=unknown

51: None 00.0: 10701 Ethernet
 [Created at net.124]
 Unique ID: usDW.ndpeucax6V1
 Parent ID: rBUF.dR48ZsvS6aD
 SysFS ID: /class/net/eth0
 SysFS Device Link: /devices/pci0000:01/0000:01:02.0
 Hardware Class: network interface
 Model: "Ethernet network interface"
 Driver: "tg3"
 Driver Modules: "tg3"
 Device File: eth0
 HW Address: 00:08:02:a0:31:4b
 Link detected: yes
 Config Status: cfg=new, avail=yes, need=no, active=unknown
 Attached to: #26 (Ethernet controller)

52: None 01.0: 10701 Ethernet
 [Created at net.124]
 Unique ID: L2Ua.ndpeucax6V1
 Parent ID: JNkJ.dR48ZsvS6aD
 SysFS ID: /class/net/eth1
 SysFS Device Link: /devices/pci0000:04/0000:04:02.0
 Hardware Class: network interface
 Model: "Ethernet network interface"
 Driver: "tg3"
 Driver Modules: "tg3"
 Device File: eth1
 HW Address: 00:08:02:a0:30:d9
 Link detected: no
 Config Status: cfg=new, avail=yes, need=no, active=unknown
 Attached to: #27 (Ethernet controller)

53: None 00.0: 10701 Ethernet
 [Created at net.124]
 Unique ID: fLK9.ndpeucax6V1
 SysFS ID: /class/net/pan0
 Hardware Class: network interface
 Model: "Ethernet network interface"
 Driver: "bridge"
 Device File: pan0
 HW Address: 12:1a:ad:f2:7b:c7

Link detected: yes
Config Status: cfg=new, avail=yes, need=no, active=unknown

Appendix B: Testing Environment Software Information

The following was taken from the "apt-show-versions" utility on the testing server:
        abiword/squeeze uptodate 2.8.2-2.1
        abiword-common/squeeze uptodate 2.8.2-2.1
        abiword-plugin-grammar/squeeze uptodate 2.8.2-2.1
        abiword-plugin-mathview/squeeze uptodate 2.8.2-2.1
        acpi/squeeze uptodate 1.5-2
        acpi-support-base/squeeze uptodate 0.137-5
        acpid/squeeze upgradeable from 1:2.0.7-1 to 1:2.0.7-1squeeze3
        adduser/squeeze uptodate 3.112+nmu2
        alacarte/squeeze uptodate 0.13.2-1
        alsa-base/squeeze uptodate 1.0.23+dfsg-2
        alsa-utils/squeeze uptodate 1.0.23-3
        anacron/squeeze uptodate 2.3-14
        apache2.2-bin/squeeze upgradeable from 2.2.16-6+squeeze1 to 2.2.16-6+squeeze4
        app-install-data/squeeze uptodate 2010.11.17
        apt/squeeze uptodate 0.8.10.3+squeeze1
        apt-listchanges/squeeze uptodate 2.85.7+squeeze1
        apt-show-versions/squeeze uptodate 0.16
        apt-utils/squeeze uptodate 0.8.10.3+squeeze1
        apt-xapian-index/squeeze uptodate 0.41
        aptdaemon/squeeze uptodate 0.31+bzr413-1.1
        aptitude/squeeze upgradeable from 0.6.3-3.2 to 0.6.3-3.2+squeeze1
        aspell/squeeze uptodate 0.60.6-4
        aspell-en/squeeze uptodate 6.0-0-6
        at/squeeze uptodate 3.1.12-1
        at-spi/squeeze uptodate 1.30.1-3
        autoconf/squeeze uptodate 2.67-2
        automake/squeeze uptodate 1:1.11.1-1
        autopoint/squeeze uptodate 0.18.1.1-3
        autotools-dev/squeeze uptodate 20100122.1
        avahi-daemon/squeeze uptodate 0.6.27-2+squeeze1
        baobab/squeeze uptodate 2.30.0-2
        base-files/squeeze upgradeable from 6.0squeeze2 to 6.0squeeze3
        base-passwd/squeeze uptodate 3.5.22
        bash/squeeze uptodate 4.1-3
        bash-completion/squeeze uptodate 1:1.2-3
        bc/squeeze uptodate 1.06.95-2
        bind9-host/squeeze upgradeable from 1:9.7.3.dfsg-1~squeeze3 to 1:9.7.3.dfsg-1~squeeze4
        binfmt-support/squeeze uptodate 1.2.18
        binutils/squeeze uptodate 2.20.1-16
        bluez/squeeze uptodate 4.66-3
        bogofilter/squeeze uptodate 1.2.2-2
        bogofilter-bdb/squeeze uptodate 1.2.2-2
        bogofilter-common/squeeze uptodate 1.2.2-2
        brasero/squeeze uptodate 2.30.3-2
        brasero-common/squeeze uptodate 2.30.3-2
        browser-plugin-gnash/squeeze uptodate 0.8.8-5
        bsd-mailx/squeeze uptodate 8.1.2-0.20100314cvs-1
        bsdmainutils/squeeze uptodate 8.0.13
        bsdutils/squeeze uptodate 1:2.17.2-9
        build-essential/squeeze uptodate 11.5
        busybox/squeeze uptodate 1:1.17.1-8
        bzip2/squeeze uptodate 1.0.5-6

ca-certificates/squeeze upgradeable from 20090814+nmu2 to 20090814+nmu3squeeze1
ca-certificates-java/squeeze uptodate 20100412
capplets-data/squeeze uptodate 1:2.30.1-2
cdrdao/squeeze uptodate 1:1.2.3-0.1
cheese/squeeze uptodate 2.30.1-2
cheese-common/squeeze uptodate 2.30.1-2
cli-common/squeeze uptodate 0.7.1
coccinelle/squeeze uptodate 0.2.3.deb-1
console-setup/squeeze uptodate 1.68+squeeze2
console-terminus/squeeze uptodate 4.30-2
consolekit/squeeze uptodate 0.4.1-4
coreutils/squeeze uptodate 8.5-1
cpio/squeeze uptodate 2.11-4
cpp/squeeze uptodate 4:4.4.5-1
cpp-4.4/squeeze uptodate 4.4.5-8
cpufrequtils/squeeze uptodate 007-1
cron/squeeze uptodate 3.0pl1-116
cups-pk-helper/squeeze uptodate 0.1.0-2
dash/squeeze uptodate 0.5.5.1-7.4
dasher/squeeze uptodate 4.11-1
dasher-data/squeeze uptodate 4.11-1
dbus/squeeze uptodate 1.2.24-4+squeeze1
dbus-x11/squeeze uptodate 1.2.24-4+squeeze1
dc/squeeze uptodate 1.06.95-2
debconf/squeeze uptodate 1.5.36.1
debconf-i18n/squeeze uptodate 1.5.36.1
debian-archive-keyring/squeeze uptodate 2010.08.28
debian-faq/squeeze uptodate 4.0.4+nmu1
debianutils/squeeze uptodate 3.4
default-jre/squeeze uptodate 1:1.6-40
default-jre-headless/squeeze uptodate 1:1.6-40
defoma/squeeze uptodate 0.11.11
deskbar-applet/squeeze uptodate 2.32.0-1
desktop-base/squeeze uptodate 6.0.5squeeze1
desktop-file-utils/squeeze uptodate 0.15-2
dictionaries-common/squeeze uptodate 1.5.17
diffutils/squeeze uptodate 1:3.0-1
discover/squeeze uptodate 2.1.2-5
discover-data/squeeze uptodate 2.2010.10.18
dmidecode/squeeze uptodate 2.9-1.2
dmsetup/squeeze uptodate 2:1.02.48-5
dmz-cursor-theme/squeeze uptodate 0.4.3
dnsmasq-base/squeeze uptodate 2.55-2+b1
dnsutils/squeeze upgradeable from 1:9.7.3.dfsg-1~squeeze3 to 1:9.7.3.dfsg-1~squeeze4
doc-debian/squeeze uptodate 4.0.2
doc-linux-text/squeeze uptodate 2008.08-1
docbook-xml/squeeze uptodate 4.5-7
dosfstools/squeeze uptodate 3.0.9-1
dpkg/squeeze uptodate 1.15.8.11
dpkg-dev/squeeze uptodate 1.15.8.11
dvd+rw-tools/squeeze uptodate 7.1-6
e2fslibs/squeeze uptodate 1.41.12-4stable1
e2fsprogs/squeeze uptodate 1.41.12-4stable1
eject/squeeze uptodate 2.1.5+deb1+cvs20081104-7.1
ekiga/squeeze uptodate 3.2.7-2
empathy/squeeze uptodate 2.30.3-1

empathy-common/squeeze uptodate 2.30.3-1
eog/squeeze uptodate 2.30.2-1
epiphany-browser/squeeze uptodate 2.30.6-1
epiphany-browser-data/squeeze uptodate 2.30.6-1
epiphany-extensions/squeeze uptodate 2.30.2-1
esound-common/squeeze uptodate 0.2.41-8
espeak/squeeze uptodate 1.43.03-2
espeak-data/squeeze uptodate 1.43.03-2
evince/squeeze upgradeable from 2.30.3-2 to 2.30.3-2+squeeze1
evince-common/squeeze upgradeable from 2.30.3-2 to 2.30.3-2+squeeze1
evolution/squeeze uptodate 2.30.3-5
evolution-common/squeeze uptodate 2.30.3-5
evolution-data-server/squeeze uptodate 2.30.3-2
evolution-data-server-common/squeeze uptodate 2.30.3-2
evolution-exchange/squeeze uptodate 2.30.2-1
evolution-plugins/squeeze uptodate 2.30.3-5
evolution-webcal/squeeze uptodate 2.28.1-1
exim4/squeeze uptodate 4.72-6+squeeze2
exim4-base/squeeze uptodate 4.72-6+squeeze2
exim4-config/squeeze uptodate 4.72-6+squeeze2
exim4-daemon-light/squeeze uptodate 4.72-6+squeeze2
exiv2/squeeze uptodate 0.20-2
fakeroot/squeeze uptodate 1.14.4-1
fast-user-switch-applet/squeeze uptodate 2.24.0-6
file/squeeze uptodate 5.04-5
file-roller/squeeze uptodate 2.30.2-2
findutils/squeeze uptodate 4.4.2-1+b1
fontconfig/squeeze uptodate 2.8.0-2.1
fontconfig-config/squeeze uptodate 2.8.0-2.1
freedesktop-sound-theme/squeeze uptodate 0.7.dfsg-1
freeglut3/squeeze uptodate 2.6.0-1
freepats/squeeze uptodate 20060219-1
ftp/squeeze uptodate 0.17-23
fuse-utils/squeeze uptodate 2.8.4-1.1
g++/squeeze uptodate 4:4.4.5-1
g++-4.4/squeeze uptodate 4.4.5-8
gcalctool/squeeze uptodate 5.30.2-2
gcc/squeeze uptodate 4:4.4.5-1
gcc-4.4/squeeze uptodate 4.4.5-8
gcc-4.4-base/squeeze uptodate 4.4.5-8
gconf-defaults-service/squeeze uptodate 2.28.1-6
gconf-editor/squeeze uptodate 2.30.0-2
gconf2/squeeze uptodate 2.28.1-6
gconf2-common/squeeze uptodate 2.28.1-6
gdebi/squeeze upgradeable from 0.6.4 to 0.6.4+squeeze1
gdebi-core/squeeze upgradeable from 0.6.4 to 0.6.4+squeeze1
gdm/squeeze uptodate 2.20.11-4
gdm-themes/squeeze uptodate 0.6.2
gedit/squeeze uptodate 2.30.4-1squeeze1
gedit-common/squeeze uptodate 2.30.4-1squeeze1
gedit-plugins/squeeze uptodate 2.30.0-1
genisoimage/squeeze uptodate 9:1.1.11-1
geoclue/squeeze uptodate 0.12.0-1
geoclue-hostip/squeeze uptodate 0.12.0-1
geoclue-localnet/squeeze uptodate 0.12.0-1
geoclue-manual/squeeze uptodate 0.12.0-1

geoclue-yahoo/squeeze uptodate 0.12.0-1
geoip-database/squeeze uptodate 1.4.7~beta6+dfsg-1
gettext/squeeze uptodate 0.18.1.1-3
gettext-base/squeeze uptodate 0.18.1.1-3
ghostscript/squeeze uptodate 8.71~dfsg2-9
gimp/squeeze uptodate 2.6.10-1
gimp-data/squeeze uptodate 2.6.10-1
gir1.0-clutter-1.0/squeeze uptodate 1.2.12-3
gir1.0-freedesktop/squeeze uptodate 0.6.14-1+b1
gir1.0-glib-2.0/squeeze uptodate 0.6.14-1+b1
gir1.0-gstreamer-0.10/squeeze uptodate 0.10.30-1
gir1.0-gtk-2.0/squeeze uptodate 0.6.5-7
gir1.0-json-glib-1.0/squeeze uptodate 0.10.2-2
git/squeeze uptodate 1:1.7.2.5-3
gksu/squeeze uptodate 2.0.2-5
gnash/squeeze uptodate 0.8.8-5
gnash-common/squeeze uptodate 0.8.8-5
gnome/squeeze uptodate 1:2.30+7
gnome-about/squeeze uptodate 2.30.2-2
gnome-accessibility/squeeze uptodate 1:2.30+7
gnome-accessibility-themes/squeeze uptodate 2.30.2-1
gnome-applets/squeeze uptodate 2.30.0-3
gnome-applets-data/squeeze uptodate 2.30.0-3
gnome-backgrounds/squeeze uptodate 2.32.0-1
gnome-bluetooth/squeeze uptodate 2.30.0-2
gnome-cards-data/squeeze uptodate 1:2.30.2-2
gnome-codec-install/squeeze uptodate 0.4.7+nmu1
gnome-control-center/squeeze uptodate 1:2.30.1-2
gnome-core/squeeze uptodate 1:2.30+7
gnome-desktop-data/squeeze uptodate 2.30.2-2
gnome-desktop-environment/squeeze uptodate 1:2.30+7
gnome-dictionary/squeeze uptodate 2.30.0-2
gnome-disk-utility/squeeze uptodate 2.30.1-2
gnome-doc-utils/squeeze uptodate 0.20.1-1
gnome-games/squeeze uptodate 1:2.30.2-2
gnome-games-data/squeeze uptodate 1:2.30.2-2
gnome-games-extra-data/squeeze uptodate 2.30.0-1
gnome-icon-theme/squeeze uptodate 2.30.3-2
gnome-js-common/squeeze uptodate 0.1.1-1
gnome-keyring/squeeze uptodate 2.30.3-5
gnome-mag/squeeze uptodate 1:0.16.1-2
gnome-media/squeeze uptodate 2.30.0-1
gnome-media-common/squeeze uptodate 2.30.0-1
gnome-menus/squeeze uptodate 2.30.3-1
gnome-mime-data/squeeze uptodate 2.18.0-1
gnome-netstatus-applet/squeeze uptodate 2.28.1-1
gnome-nettool/squeeze uptodate 2.30.0-3
gnome-office/squeeze uptodate 1:2.30+7
gnome-orca/squeeze uptodate 2.30.2-2
gnome-panel/squeeze uptodate 2.30.2-2
gnome-panel-data/squeeze uptodate 2.30.2-2
gnome-power-manager/squeeze uptodate 2.32.0-2
gnome-screensaver/squeeze uptodate 2.30.0-2squeeze1
gnome-screenshot/squeeze uptodate 2.30.0-2
gnome-search-tool/squeeze uptodate 2.30.0-2
gnome-session/squeeze uptodate 2.30.2-3

gnome-session-bin/squeeze uptodate 2.30.2-3
gnome-session-canberra/squeeze uptodate 0.24-1
gnome-session-common/squeeze uptodate 2.30.2-3
gnome-settings-daemon/squeeze uptodate 2.30.2-2+squeeze1
gnome-system-log/squeeze uptodate 2.30.0-2
gnome-system-monitor/squeeze uptodate 2.28.1-1
gnome-system-tools/squeeze uptodate 2.30.2-2
gnome-terminal/squeeze uptodate 2.30.2-1
gnome-terminal-data/squeeze uptodate 2.30.2-1
gnome-themes/squeeze uptodate 2.30.2-1
gnome-themes-extras/squeeze uptodate 2.22.0-3
gnome-themes-more/squeeze uptodate 0.9.0.deb0.8
gnome-user-guide/squeeze uptodate 2.30.1-1
gnome-user-share/squeeze uptodate 2.30.1-1
gnome-utils-common/squeeze uptodate 2.30.0-2
gnuchess/squeeze uptodate 5.07-7
gnuchess-book/squeeze uptodate 1.01-2
gnumeric/squeeze uptodate 1.10.8-1squeeze5
gnumeric-common/squeeze uptodate 1.10.8-1squeeze5
gnupg/squeeze uptodate 1.4.10-4
gok/squeeze uptodate 2.30.0-1
gpgv/squeeze uptodate 1.4.10-4
grep/squeeze uptodate 2.6.3-3
groff-base/squeeze uptodate 1.20.1-10
grub-common/squeeze upgradeable from 1.98+20100804-14 to 1.98+20100804-14+squeeze1
grub-pc/squeeze upgradeable from 1.98+20100804-14 to 1.98+20100804-14+squeeze1
gsfonts/squeeze uptodate 1:8.11+urwcyr1.0.7~pre44-4.2
gstreamer0.10-alsa/squeeze uptodate 0.10.30-1
gstreamer0.10-ffmpeg/squeeze uptodate 0.10.10-1
gstreamer0.10-fluendo-mp3/squeeze uptodate 0.10.14.debian-1
gstreamer0.10-nice/squeeze uptodate 0.0.12-1
gstreamer0.10-plugins-bad/squeeze uptodate 0.10.19-2+b2
gstreamer0.10-plugins-base/squeeze uptodate 0.10.30-1
gstreamer0.10-plugins-good/squeeze uptodate 0.10.24-1
gstreamer0.10-plugins-ugly/squeeze uptodate 0.10.15-1
gstreamer0.10-tools/squeeze uptodate 0.10.30-1
gstreamer0.10-x/squeeze uptodate 0.10.30-1
gtk2-engines/squeeze uptodate 1:2.20.1-1
gtk2-engines-pixbuf/squeeze uptodate 2.20.1-2
gtk2-engines-smooth/squeeze uptodate 1:2.14.3+deb5
gucharmap/squeeze uptodate 1:2.30.3-1
guile-1.8-libs/squeeze uptodate 1.8.7+1-3
gvfs/squeeze uptodate 1.6.4-3
gvfs-backends/squeeze uptodate 1.6.4-3
gvfs-bin/squeeze uptodate 1.6.4-3
gzip/squeeze uptodate 1.3.12-9
hamster-applet/squeeze uptodate 2.30.2-3
hdparm/squeeze uptodate 9.32-1
hicolor-icon-theme/squeeze uptodate 0.12-1
host/squeeze upgradeable from 1:9.7.3.dfsg-1~squeeze3 to 1:9.7.3.dfsg-1~squeeze4
hostname/squeeze uptodate 3.04
hunspell-en-us/squeeze uptodate 20070829-4
hwdata/squeeze uptodate 0.230-1
hwinfo/squeeze uptodate 16.0-2
icedtea-6-jre-cacao/squeeze uptodate 6b18-1.8.7-2~squeeze1
ifupdown/squeeze uptodate 0.6.10

imagemagick/squeeze uptodate 8:6.6.0.4-3
info/squeeze uptodate 4.13a.dfsg.1-6
initramfs-tools/squeeze uptodate 0.98.8
initscripts/squeeze uptodate 2.88dsf-13.1
inkscape/squeeze uptodate 0.47.0-2+b1
insserv/squeeze uptodate 1.14.0-2
install-info/squeeze uptodate 4.13a.dfsg.1-6
installation-report/squeeze uptodate 2.44
iproute/squeeze uptodate 20100519-3
iptables/squeeze uptodate 1.4.8-3
iputils-ping/squeeze uptodate 3:20100418-3
isc-dhcp-client/squeeze upgradeable from 4.1.1-P1-15+squeeze2 to 4.1.1-P1-15+squeeze3
isc-dhcp-common/squeeze upgradeable from 4.1.1-P1-15+squeeze2 to 4.1.1-P1-15+squeeze3
iso-codes/squeeze uptodate 3.23-1
java-common/squeeze uptodate 0.40
kbd/squeeze uptodate 1.15.2-2
keyboard-configuration/squeeze uptodate 1.68+squeeze2
klibc-utils/squeeze uptodate 1.5.20-1+squeeze1
laptop-detect/squeeze uptodate 0.13.7
less/squeeze uptodate 436-1
liba52-0.7.4/squeeze uptodate 0.7.4-14
libaa1/squeeze uptodate 1.4p5-38
libabiword-2.8/squeeze uptodate 2.8.2-2.1
libaccess-bridge-java/squeeze uptodate 1.26.2-5
libaccess-bridge-java-jni/squeeze uptodate 1.26.2-5
libacl1/squeeze uptodate 2.2.49-4
libaiksaurus-1.2-0c2a/squeeze uptodate 1.2.1+dev-0.12-6
libaiksaurus-1.2-data/squeeze uptodate 1.2.1+dev-0.12-6
libaiksaurusgtk-1.2-0c2a/squeeze uptodate 1.2.1+dev-0.12-6
libalgorithm-diff-perl/squeeze uptodate 1.19.02-2
libalgorithm-diff-xs-perl/squeeze uptodate 0.04-1
libalgorithm-merge-perl/squeeze uptodate 0.08-2
libao-common/squeeze uptodate 1.0.0-5
libao4/squeeze uptodate 1.0.0-5
libapache2-mod-dnssd/squeeze uptodate 0.6-2
libapr1/squeeze uptodate 1.4.2-6+squeeze3
libaprutil1/squeeze uptodate 1.3.9+dfsg-5
libaprutil1-dbd-sqlite3/squeeze uptodate 1.3.9+dfsg-5
libaprutil1-ldap/squeeze uptodate 1.3.9+dfsg-5
libapt-pkg-perl/squeeze uptodate 0.1.24+b1
libarchive1/squeeze uptodate 2.8.4-1
libart-2.0-2/squeeze uptodate 2.3.21-1
libart2.0-cil/squeeze uptodate 2.24.1-6
libasound2/squeeze uptodate 1.0.23-2.1
libaspell15/squeeze uptodate 0.60.6-4
libass4/squeeze uptodate 0.9.9-1
libasyncns0/squeeze uptodate 0.3-1.1
libatasmart4/squeeze uptodate 0.17+git20100219-2
libatk1.0-0/squeeze uptodate 1.30.0-1
libatk1.0-data/squeeze uptodate 1.30.0-1
libatspi1.0-0/squeeze uptodate 1.30.1-3
libattr1/squeeze uptodate 1:2.4.44-2
libaudiofile0/squeeze uptodate 0.2.6-8
libaudit0/squeeze uptodate 1.7.13-1+b2
libavahi-client3/squeeze uptodate 0.6.27-2+squeeze1
libavahi-common-data/squeeze uptodate 0.6.27-2+squeeze1

libavahi-common3/squeeze uptodate 0.6.27-2+squeeze1
libavahi-core7/squeeze uptodate 0.6.27-2+squeeze1
libavahi-glib1/squeeze uptodate 0.6.27-2+squeeze1
libavahi-gobject0/squeeze uptodate 0.6.27-2+squeeze1
libavahi-ui0/squeeze uptodate 0.6.27-2+squeeze1
libavc1394-0/squeeze uptodate 0.5.3-1+b2
libavcodec52/squeeze upgradeable from 4:0.5.2-6 to 4:0.5.5-1
libavformat52/squeeze upgradeable from 4:0.5.2-6 to 4:0.5.5-1
libavutil49/squeeze upgradeable from 4:0.5.2-6 to 4:0.5.5-1
libbabl-0.0-0/squeeze uptodate 0.0.22-1
libbind9-60/squeeze upgradeable from 1:9.7.3.dfsg-1~squeeze3 to 1:9.7.3.dfsg-1~squeeze4
libblas3gf/squeeze uptodate 1.2-8
libblkid1/squeeze uptodate 2.17.2-9
libbluetooth3/squeeze uptodate 4.66-3
libbonobo2-0/squeeze uptodate 2.24.3-1
libbonobo2-common/squeeze uptodate 2.24.3-1
libbonoboui2-0/squeeze uptodate 2.24.3-1
libbonoboui2-common/squeeze uptodate 2.24.3-1
libboost-date-time1.42.0/squeeze uptodate 1.42.0-4
libboost-iostreams1.42.0/squeeze uptodate 1.42.0-4
libboost-python1.42.0/squeeze uptodate 1.42.0-4
libboost-thread1.42.0/squeeze uptodate 1.42.0-4
libbrasero-media0/squeeze uptodate 2.30.3-2
libbrlapi0.5/squeeze upgradeable from 4.2-7 to 4.2-7+squeeze1
libbsd0/squeeze uptodate 0.2.0-1
libburn4/squeeze uptodate 0.8.0.pl00-2+squeeze1
libbz2-1.0/squeeze uptodate 1.0.5-6
libc-bin/squeeze uptodate 2.11.2-10
libc-dev-bin/squeeze uptodate 2.11.2-10
libc6/squeeze uptodate 2.11.2-10
libc6-dev/squeeze uptodate 2.11.2-10
libc6-i686/squeeze uptodate 2.11.2-10
libcaca0/squeeze uptodate 0.99.beta17-1
libcairo-perl/squeeze uptodate 1.070-1
libcairo2/squeeze uptodate 1.8.10-6
libcairomm-1.0-1/squeeze uptodate 1.8.4-3
libcamel1.2-14/squeeze uptodate 2.30.3-2
libcanberra-gtk-module/squeeze uptodate 0.24-1
libcanberra-gtk0/squeeze uptodate 0.24-1
libcanberra0/squeeze uptodate 0.24-1
libcap-ng-dev/squeeze uptodate 0.6.4-1
libcap-ng0/squeeze uptodate 0.6.4-1
libcap2/squeeze uptodate 1:2.19-3
libcdaudio1/squeeze uptodate 0.99.12p2-9
libcdio-cdda0/squeeze uptodate 0.81-4
libcdio-paranoia0/squeeze uptodate 0.81-4
libcdio10/squeeze uptodate 0.81-4
libcdparanoia0/squeeze uptodate 3.10.2+debian-9
libcdt4/squeeze uptodate 2.26.3-5
libcelt0-0/squeeze uptodate 0.7.1-1
libchamplain-0.4-0/squeeze uptodate 0.4.6-2+b1
libchamplain-gtk-0.4-0/squeeze uptodate 0.4.6-2+b1
libcheese-gtk18/squeeze uptodate 2.30.1-2
libck-connector0/squeeze uptodate 0.4.1-4
libclutter-1.0-0/squeeze uptodate 1.2.12-3
libclutter-gtk-0.10-0/squeeze uptodate 0.10.4-1

libcolamd2.7.1/squeeze uptodate 1:3.4.0-2
libcolorblind0/squeeze uptodate 0.0.1-1
libcomerr2/squeeze uptodate 1.41.12-4stable1
libcpufreq0/squeeze uptodate 007-1
libcroco3/squeeze uptodate 0.6.2-1
libcryptui0/squeeze uptodate 2.30.1-2
libcups2/squeeze upgradeable from 1.4.4-7 to 1.4.4-7+squeeze1
libcupsimage2/squeeze upgradeable from 1.4.4-7 to 1.4.4-7+squeeze1
libcurl3-gnutls/squeeze uptodate 7.21.0-2
libcurses-perl/squeeze uptodate 1.28-1
libcurses-ui-perl/squeeze uptodate 0.9607-1
libcwidget3/squeeze uptodate 0.5.16-3
libdaemon0/squeeze uptodate 0.14-2
libdatrie1/squeeze uptodate 0.2.4-1
libdb4.6/squeeze uptodate 4.6.21-16
libdb4.7/squeeze uptodate 4.7.25-9
libdb4.8/squeeze uptodate 4.8.30-2
libdbus-1-3/squeeze uptodate 1.2.24-4+squeeze1
libdbus-glib-1-2/squeeze uptodate 0.88-2.1
libdc1394-22/squeeze uptodate 2.1.2-3
libdca0/squeeze uptodate 0.0.5-3
libdevmapper1.02.1/squeeze uptodate 2:1.02.48-5
libdirac-encoder0/squeeze uptodate 1.0.2-3
libdirectfb-1.2-9/squeeze uptodate 1.2.10.0-4
libdiscid0/squeeze uptodate 0.2.2-1
libdiscover2/squeeze uptodate 2.1.2-5
libdjvulibre-text/squeeze uptodate 3.5.23-3
libdjvulibre21/squeeze uptodate 3.5.23-3
libdmx1/squeeze uptodate 1:1.1.0-2
libdns69/squeeze upgradeable from 1:9.7.3.dfsg-1~squeeze3 to 1:9.7.3.dfsg-1~squeeze4
libdpkg-perl/squeeze uptodate 1.15.8.11
libdrm-intel1/squeeze uptodate 2.4.21-1~squeeze3
libdrm-nouveau1/squeeze uptodate 2.4.21-1~squeeze3
libdrm-radeon1/squeeze uptodate 2.4.21-1~squeeze3
libdrm2/squeeze uptodate 2.4.21-1~squeeze3
libdv4/squeeze uptodate 1.0.0-2.1
libdvdnav4/squeeze uptodate 4.1.3-7
libdvdread4/squeeze uptodate 4.1.3-10
libebackend1.2-0/squeeze uptodate 2.30.3-2
libebook1.2-9/squeeze uptodate 2.30.3-2
libecal1.2-7/squeeze uptodate 2.30.3-2
libedata-book1.2-2/squeeze uptodate 2.30.3-2
libedata-cal1.2-7/squeeze uptodate 2.30.3-2
libedataserver1.2-13/squeeze uptodate 2.30.3-2
libedataserverui1.2-8/squeeze uptodate 2.30.3-2
libedit2/squeeze uptodate 2.11-20080614-2
libeggdbus-1-0/squeeze uptodate 0.6-1
libegroupwise1.2-13/squeeze uptodate 2.30.3-2
libelf1/squeeze uptodate 0.148-1
libenca0/squeeze uptodate 1.13-3
libenchant1c2a/squeeze uptodate 1.6.0-1
libepc-1.0-2/squeeze uptodate 0.3.11-1
libepc-common/squeeze uptodate 0.3.11-1
libepc-ui-1.0-2/squeeze uptodate 0.3.11-1
libept1/squeeze uptodate 1.0.4
liberror-perl/squeeze uptodate 0.17-1

libesd0/squeeze uptodate 0.2.41-8
libespeak1/squeeze uptodate 1.43.03-2
libevent-1.4-2/squeeze uptodate 1.4.13-stable-1
libevince2/squeeze upgradeable from 2.30.3-2 to 2.30.3-2+squeeze1
libevolution/squeeze uptodate 2.30.3-5
libexempi3/squeeze uptodate 2.1.1-1
libexif12/squeeze uptodate 0.6.19-1
libexiv2-9/squeeze uptodate 0.20-2
libexpat1/squeeze uptodate 2.0.1-7
libfaad2/squeeze uptodate 2.7-6
libfam0/squeeze uptodate 2.7.0-17
libffi5/squeeze uptodate 3.0.9-3
libfftw3-3/squeeze uptodate 3.2.2-1
libfile-copy-recursive-perl/squeeze uptodate 0.38-1
libflac8/squeeze uptodate 1.2.1-2+b1
libflite1/squeeze uptodate 1.4-release-2
libfont-afm-perl/squeeze uptodate 1.20-1
libfont-freetype-perl/squeeze uptodate 0.03-1
libfontconfig1/squeeze uptodate 2.8.0-2.1
libfontenc1/squeeze uptodate 1:1.0.5-2
libfreerdp-plugins-standard/squeeze uptodate 0.7.4-1
libfreerdp0/squeeze uptodate 0.7.4-1
libfreetype6/squeeze upgradeable from 2.4.2-2.1 to 2.4.2-2.1+squeeze3
libfribidi0/squeeze uptodate 0.19.2-1
libfs6/squeeze uptodate 2:1.0.2-1
libfuse2/squeeze uptodate 2.8.4-1.1
libgail-common/squeeze uptodate 2.20.1-2
libgail-gnome-module/squeeze uptodate 1.20.3-1
libgail18/squeeze uptodate 2.20.1-2
libgalago3/squeeze uptodate 0.5.2-2
libgc1c2/squeeze uptodate 1:6.8-1.2
libgcc1/squeeze uptodate 1:4.4.5-8
libgconf2-4/squeeze uptodate 2.28.1-6
libgconf2.0-cil/squeeze uptodate 2.24.1-6
libgcr0/squeeze uptodate 2.30.3-5
libgcrypt11/squeeze uptodate 1.4.5-2
libgd2-noxpm/squeeze uptodate 2.0.36~rc1~dfsg-5
libgdata-common/squeeze uptodate 0.6.4-2
libgdata-google1.2-1/squeeze uptodate 2.30.3-2
libgdata1.2-1/squeeze uptodate 2.30.3-2
libgdata7/squeeze uptodate 0.6.4-2
libgdbm3/squeeze uptodate 1.8.3-9
libgdict-1.0-6/squeeze uptodate 2.30.0-2
libgdome2-0/squeeze uptodate 0.8.1+debian-4
libgdome2-cpp-smart0c2a/squeeze uptodate 0.2.6-5
libgdu-gtk0/squeeze uptodate 2.30.1-2
libgdu0/squeeze uptodate 2.30.1-2
libgee2/squeeze uptodate 0.5.2-1
libgegl-0.0-0/squeeze uptodate 0.0.22-2+b1
libgeoclue0/squeeze uptodate 0.12.0-1
libgeoip1/squeeze uptodate 1.4.7~beta6+dfsg-1
libgexiv2-0/squeeze uptodate 0.1.0-1+b1
libgfortran3/squeeze uptodate 4.4.5-8
libgif4/squeeze uptodate 4.1.6-9
libgimp2.0/squeeze uptodate 2.6.10-1
libgirepository1.0-0/squeeze uptodate 0.6.14-1+b1

libgksu2-0/squeeze uptodate 2.0.13~pre1-3
libgl1-mesa-dri/squeeze upgradeable from 7.7.1-4 to 7.7.1-5
libgl1-mesa-glx/squeeze upgradeable from 7.7.1-4 to 7.7.1-5
libglade2-0/squeeze uptodate 1:2.6.4-1
libglade2.0-cil/squeeze uptodate 2.12.10-1
libglib-perl/squeeze uptodate 2:1.223-1
libglib2.0-0/squeeze uptodate 2.24.2-1
libglib2.0-cil/squeeze uptodate 2.12.10-1
libglib2.0-data/squeeze uptodate 2.24.2-1
libglibmm-2.4-1c2a/squeeze uptodate 2.24.2-1
libglu1-mesa/squeeze upgradeable from 7.7.1-4 to 7.7.1-5
libgme0/squeeze uptodate 0.5.5-2
libgmime-2.4-2/squeeze uptodate 2.4.14-1+nmu1
libgmime2.4-cil/squeeze uptodate 2.4.14-1+nmu1
libgmp3c2/squeeze uptodate 2:4.3.2+dfsg-1
libgnome-bluetooth7/squeeze uptodate 2.30.0-2
libgnome-desktop-2-17/squeeze uptodate 2.30.2-2
libgnome-keyring0/squeeze uptodate 2.30.1-1
libgnome-mag2/squeeze uptodate 1:0.16.1-2
libgnome-media0/squeeze uptodate 2.30.0-1
libgnome-menu2/squeeze uptodate 2.30.3-1
libgnome-speech7/squeeze uptodate 1:0.4.25-4
libgnome-vfs2.0-cil/squeeze uptodate 2.24.1-6
libgnome-window-settings1/squeeze uptodate 1:2.30.1-2
libgnome2-0/squeeze uptodate 2.30.0-1
libgnome2-canvas-perl/squeeze uptodate 1.002-2
libgnome2-common/squeeze uptodate 2.30.0-1
libgnome2-perl/squeeze uptodate 1.042-2
libgnome2-vfs-perl/squeeze uptodate 1.081-1
libgnome2.24-cil/squeeze uptodate 2.24.1-6
libgnomecanvas2-0/squeeze uptodate 2.30.1-1
libgnomecanvas2-common/squeeze uptodate 2.30.1-1
libgnomekbd-common/squeeze uptodate 2.30.2-2
libgnomekbd4/squeeze uptodate 2.30.2-2
libgnomepanel2.24-cil/squeeze uptodate 2.26.0-3+b1
libgnomeui-0/squeeze uptodate 2.24.3-1
libgnomeui-common/squeeze uptodate 2.24.3-1
libgnomevfs2-0/squeeze uptodate 1:2.24.3-1
libgnomevfs2-common/squeeze uptodate 1:2.24.3-1
libgnomevfs2-extra/squeeze uptodate 1:2.24.3-1
libgnutls26/squeeze uptodate 2.8.6-1
libgoffice-0.8-8/squeeze uptodate 0.8.8-1
libgoffice-0.8-8-common/squeeze uptodate 0.8.8-1
libgomp1/squeeze uptodate 4.4.5-8
libgp11-0/squeeze uptodate 2.30.3-5
libgpg-error0/squeeze uptodate 1.6-1
libgpgme11/squeeze uptodate 1.2.0-1.2
libgphoto2-2/squeeze uptodate 2.4.6-3
libgphoto2-port0/squeeze uptodate 2.4.6-3
libgpm2/squeeze uptodate 1.20.4-3.3
libgpod-common/squeeze uptodate 0.7.93-0.3
libgpod4/squeeze uptodate 0.7.93-0.3
libgraph4/squeeze uptodate 2.26.3-5
libgs8/squeeze uptodate 8.71~dfsg2-9
libgsf-1-114/squeeze uptodate 1.14.18-1
libgsf-1-common/squeeze uptodate 1.14.18-1

libgsl0ldbl/squeeze uptodate 1.14+dfsg-1
libgsm1/squeeze uptodate 1.0.13-3
libgssapi-krb5-2/squeeze upgradeable from 1.8.3+dfsg-4squeeze1 to 1.8.3+dfsg-4squeeze2
libgssdp-1.0-2/squeeze uptodate 0.8.0-2
libgssglue1/squeeze uptodate 0.1-4
libgssrpc4/squeeze upgradeable from 1.8.3+dfsg-4squeeze1 to 1.8.3+dfsg-4squeeze2
libgstfarsight0.10-0/squeeze uptodate 0.0.20-2
libgstreamer-plugins-base0.10-0/squeeze uptodate 0.10.30-1
libgstreamer0.10-0/squeeze uptodate 0.10.30-1
libgtk2-perl/squeeze uptodate 2:1.222-1
libgtk2.0-0/squeeze uptodate 2.20.1-2
libgtk2.0-bin/squeeze uptodate 2.20.1-2
libgtk2.0-cil/squeeze uptodate 2.12.10-1
libgtk2.0-common/squeeze uptodate 2.20.1-2
libgtkglext1/squeeze uptodate 1.2.0-1.1
libgtkhtml-editor-common/squeeze uptodate 3.30.3-1
libgtkhtml-editor0/squeeze uptodate 3.30.3-1
libgtkhtml3.14-19/squeeze uptodate 3.30.3-1
libgtkimageview0/squeeze uptodate 1.6.4-1
libgtkmathview0c2a/squeeze uptodate 0.8.0-5
libgtkmm-2.4-1c2a/squeeze uptodate 1:2.20.3-1
libgtksourceview2.0-0/squeeze uptodate 2.10.4-1
libgtksourceview2.0-common/squeeze uptodate 2.10.4-1
libgtkspell0/squeeze uptodate 2.0.16-1
libgtop2-7/squeeze uptodate 2.28.1-1
libgtop2-common/squeeze uptodate 2.28.1-1
libgucharmap7/squeeze uptodate 1:2.30.3-1
libgudev-1.0-0/squeeze uptodate 164-3
libgupnp-1.0-3/squeeze uptodate 0.14.0-2
libgupnp-igd-1.0-3/squeeze uptodate 0.1.7-3
libgvc5/squeeze uptodate 2.26.3-5
libgweather-common/squeeze uptodate 2.30.3-1
libgweather1/squeeze uptodate 2.30.3-1
libhal-storage1/squeeze uptodate 0.5.14-3
libhal1/squeeze uptodate 0.5.14-3
libhd16/squeeze uptodate 16.0-2
libhtml-format-perl/squeeze uptodate 2.04-2
libhtml-parser-perl/squeeze uptodate 3.66-1
libhtml-tagset-perl/squeeze uptodate 3.20-2
libhtml-tree-perl/squeeze uptodate 3.23-2
libhtp-dev/squeeze uptodate 0.2.3-1
libhtp1/squeeze uptodate 0.2.3-1
libhunspell-1.2-0/squeeze uptodate 1.2.11-1
libical0/squeeze uptodate 0.44-3
libice6/squeeze uptodate 2:1.0.6-2
libicu44/squeeze uptodate 4.4.1-7
libid3tag0/squeeze uptodate 0.15.1b-10
libidl0/squeeze uptodate 0.8.14-0.1
libidn11/squeeze uptodate 1.15-2
libiec61883-0/squeeze uptodate 1.2.0-0.1
libieee1284-3/squeeze uptodate 0.2.11-6
libilmbase6/squeeze uptodate 1.0.1-3
libimobiledevice1/squeeze uptodate 1.0.2-1
libiptcdata0/squeeze uptodate 1.0.4-1+b1
libisc62/squeeze upgradeable from 1:9.7.3.dfsg-1~squeeze3 to 1:9.7.3.dfsg-1~squeeze4
libisccc60/squeeze upgradeable from 1:9.7.3.dfsg-1~squeeze3 to 1:9.7.3.dfsg-1~squeeze4

libisccfg62/squeeze upgradeable from 1:9.7.3.dfsg-1~squeeze3 to 1:9.7.3.dfsg-1~squeeze4
libisofs6/squeeze uptodate 0.6.32-2
libjack-jackd2-0/squeeze uptodate 1.9.6~dfsg.1-2
libjasper1/squeeze uptodate 1.900.1-7+b1
libjbig2dec0/squeeze uptodate 0.11-1
libjpeg62/squeeze uptodate 6b1-1
libjson-glib-1.0-0/squeeze uptodate 0.10.2-2
libk5crypto3/squeeze upgradeable from 1.8.3+dfsg-4squeeze1 to 1.8.3+dfsg-4squeeze2
libkadm5clnt-mit7/squeeze upgradeable from 1.8.3+dfsg-4squeeze1 to 1.8.3+dfsg-4squeeze2
libkadm5srv-mit7/squeeze upgradeable from 1.8.3+dfsg-4squeeze1 to 1.8.3+dfsg-4squeeze2
libkate1/squeeze uptodate 0.3.7-3
libkdb5-4/squeeze upgradeable from 1.8.3+dfsg-4squeeze1 to 1.8.3+dfsg-4squeeze2
libkeyutils1/squeeze uptodate 1.4-1
libklibc/squeeze uptodate 1.5.20-1+squeeze1
libkpathsea5/squeeze uptodate 2009-8
libkrb5-3/squeeze upgradeable from 1.8.3+dfsg-4squeeze1 to 1.8.3+dfsg-4squeeze2
libkrb5support0/squeeze upgradeable from 1.8.3+dfsg-4squeeze1 to 1.8.3+dfsg-4squeeze2
liblapack3gf/squeeze uptodate 3.2.1-8
liblcms1/squeeze uptodate 1.18.dfsg-1.2+b3
libldap-2.4-2/squeeze uptodate 2.4.23-7.2
liblink-grammar4/squeeze uptodate 4.6.7-1
liblircclient0/squeeze uptodate 0.8.3-5
liblocale-gettext-perl/squeeze uptodate 1.05-6
liblockfile1/squeeze uptodate 1.08-4
libloudmouth1-0/squeeze uptodate 1.4.3-7
liblouis-data/squeeze uptodate 2.0.0-1
liblouis2/squeeze uptodate 2.0.0-1
liblqr-1-0/squeeze uptodate 0.4.1-1
libltdl-dev/squeeze uptodate 2.2.6b-2
libltdl7/squeeze uptodate 2.2.6b-2
liblua5.1-0/squeeze uptodate 5.1.4-5
liblwres60/squeeze upgradeable from 1:9.7.3.dfsg-1~squeeze3 to 1:9.7.3.dfsg-1~squeeze4
liblzma2/squeeze uptodate 5.0.0-2
libmad0/squeeze uptodate 0.15.1b-5
libmagic1/squeeze uptodate 5.04-5
libmagick++3/squeeze uptodate 8:6.6.0.4-3
libmagickcore3/squeeze uptodate 8:6.6.0.4-3
libmagickcore3-extra/squeeze uptodate 8:6.6.0.4-3
libmagickwand3/squeeze uptodate 8:6.6.0.4-3
libmailtools-perl/squeeze uptodate 2.06-1
libmetacity-private0/squeeze uptodate 1:2.30.1-3
libmimic0/squeeze uptodate 1.0.4-2+b2
libmms0/squeeze uptodate 0.6-1+squeeze1
libmng1/squeeze uptodate 1.0.10-1+b1
libmodplug1/squeeze uptodate 1:0.8.8.1-1+squeeze1
libmono-addins-gui0.2-cil/squeeze uptodate 0.4-8
libmono-addins0.2-cil/squeeze uptodate 0.4-8
libmono-cairo2.0-cil/squeeze uptodate 2.6.7-5
libmono-corlib2.0-cil/squeeze uptodate 2.6.7-5
libmono-i18n-west2.0-cil/squeeze uptodate 2.6.7-5
libmono-posix2.0-cil/squeeze uptodate 2.6.7-5
libmono-security2.0-cil/squeeze uptodate 2.6.7-5
libmono-sharpzip2.84-cil/squeeze uptodate 2.6.7-5
libmono-system2.0-cil/squeeze uptodate 2.6.7-5
libmpcdec6/squeeze uptodate 2:0.1~r459-1
libmpeg2-4/squeeze uptodate 0.4.1-3

libmpfr4/squeeze uptodate 3.0.0-2
libmtp8/squeeze uptodate 1.0.3-1
libmusicbrainz3-6/squeeze uptodate 3.0.2-2
libmusicbrainz4c2a/squeeze uptodate 2.1.5-4
libnautilus-extension1/squeeze uptodate 2.30.1-2squeeze1
libncurses5/squeeze uptodate 5.7+20100313-5
libncursesw5/squeeze uptodate 5.7+20100313-5
libndesk-dbus-glib1.0-cil/squeeze uptodate 0.4.1-3
libndesk-dbus1.0-cil/squeeze uptodate 0.6.0-4
libneon27-gnutls/squeeze uptodate 0.29.3-3
libnet-dbus-perl/squeeze uptodate 0.33.6-2
libnet1/squeeze uptodate 1.1.4-2
libnet1-dev/squeeze uptodate 1.1.4-2
libnetpbm10/squeeze uptodate 2:10.0-12.2+b1
libnewt0.52/squeeze uptodate 0.52.11-1
libnfnetlink0/squeeze uptodate 1.0.0-1
libnfsidmap2/squeeze uptodate 0.23-2
libnice0/squeeze uptodate 0.0.12-1
libnl1/squeeze uptodate 1.1-6
libnm-glib-vpn1/squeeze uptodate 0.8.1-6+squeeze1
libnm-glib2/squeeze uptodate 0.8.1-6+squeeze1
libnm-util1/squeeze uptodate 0.8.1-6+squeeze1
libnotify1/squeeze uptodate 0.5.0-2
libnspr4-0d/squeeze uptodate 4.8.6-1
libnss-mdns/squeeze uptodate 0.10-3.1
libnss3-1d/squeeze upgradeable from 3.12.8-1+squeeze1 to 3.12.8-1+squeeze4
libntfs-3g75/squeeze uptodate 1:2010.3.6-1
libntfs10/squeeze uptodate 2.0.0-1+b1
libofa0/squeeze uptodate 0.9.3-3.1
libogg0/squeeze uptodate 1.2.0~dfsg-1
liboil0.3/squeeze uptodate 0.3.17-2
liboobs-1-4/squeeze uptodate 2.30.1-1
libopal3.6.8/squeeze uptodate 3.6.8~dfsg-2
libopencore-amrnb0/squeeze uptodate 0.1.2-1
libopencore-amrwb0/squeeze uptodate 0.1.2-1
libopenexr6/squeeze uptodate 1.6.1-4.1
libopenjpeg2/squeeze uptodate 1.3+dfsg-4
libopenobex1/squeeze uptodate 1.5-2
libopenraw1/squeeze uptodate 0.0.8-2
libopenspc0/squeeze uptodate 0.3.99a-2
liborbit2/squeeze uptodate 1:2.14.18-0.1
liborc-0.4-0/squeeze uptodate 1:0.4.6-2
libots0/squeeze uptodate 0.5.0-2
libpam-ck-connector/squeeze uptodate 0.4.1-4
libpam-gnome-keyring/squeeze uptodate 2.30.3-5
libpam-modules/squeeze upgradeable from 1.1.1-6.1 to 1.1.1-6.1+squeeze1
libpam-runtime/squeeze upgradeable from 1.1.1-6.1 to 1.1.1-6.1+squeeze1
libpam0g/squeeze upgradeable from 1.1.1-6.1 to 1.1.1-6.1+squeeze1
libpanel-applet2-0/squeeze uptodate 2.30.2-2
libpango-perl/squeeze uptodate 1.221-2
libpango1.0-0/squeeze uptodate 1.28.3-1+squeeze2
libpango1.0-common/squeeze uptodate 1.28.3-1+squeeze2
libpangomm-1.4-1/squeeze uptodate 2.26.2-1
libpaper-utils/squeeze uptodate 1.1.24
libpaper1/squeeze uptodate 1.1.24
libparted0debian1/squeeze uptodate 2.3-5

libpathplan4/squeeze uptodate 2.26.3-5
libpcap-dev/squeeze uptodate 1.1.1-2+squeeze1
libpcap0.8/squeeze uptodate 1.1.1-2+squeeze1
libpcap0.8-dev/squeeze uptodate 1.1.1-2+squeeze1
libpci3/squeeze uptodate 1:3.1.7-6
libpciaccess0/squeeze uptodate 0.12.0-1
libpcre3/squeeze uptodate 8.02-1.1
libpcre3-dev/squeeze uptodate 8.02-1.1
libpcrecpp0/squeeze uptodate 8.02-1.1
libpcsclite1/squeeze uptodate 1.5.5-4
libperl5.10/squeeze uptodate 5.10.1-17squeeze2
libpixman-1-0/squeeze uptodate 0.16.4-1
libplist1/squeeze uptodate 1.3-2
libplot2c2/squeeze uptodate 2.5-4
libpng12-0/squeeze upgradeable from 1.2.44-1 to 1.2.44-1+squeeze1
libpolkit-agent-1-0/squeeze upgradeable from 0.96-4 to 0.96-4+squeeze1
libpolkit-backend-1-0/squeeze upgradeable from 0.96-4 to 0.96-4+squeeze1
libpolkit-gobject-1-0/squeeze upgradeable from 0.96-4 to 0.96-4+squeeze1
libpolkit-gtk-1-0/squeeze uptodate 0.96-3
libpoppler-glib4/squeeze uptodate 0.12.4-1.2
libpoppler5/squeeze uptodate 0.12.4-1.2
libpopt0/squeeze uptodate 1.16-1
libportaudio2/squeeze uptodate 19+svn20071022-3.2
libpostproc51/squeeze upgradeable from 4:0.5.2-6 to 4:0.5.5-1
libproxy0/squeeze uptodate 0.3.1-2
libpstoedit0c2a/squeeze uptodate 3.50-3+b1
libpt2.6.7/squeeze uptodate 2.6.7-1
libpth20/squeeze uptodate 2.0.7-16
libpulse-mainloop-glib0/squeeze uptodate 0.9.21-3+squeeze1
libpulse0/squeeze uptodate 0.9.21-3+squeeze1
libpython2.6/squeeze uptodate 2.6.6-8+b1
libraptor1/squeeze uptodate 1.4.21-2
librarian0/squeeze uptodate 0.8.1-5
librasqal2/squeeze uptodate 0.9.20-1
libraw1394-11/squeeze uptodate 2.0.5-2
librdf0/squeeze uptodate 1.0.10-3
libreadline6/squeeze uptodate 6.1-3
librpcsecgss3/squeeze uptodate 0.19-2
librpm1/squeeze uptodate 4.8.1-6
librpmio1/squeeze uptodate 4.8.1-6
librsvg2-2/squeeze uptodate 2.26.3-1
librsvg2-common/squeeze uptodate 2.26.3-1
libsane/squeeze uptodate 1.0.21-9
libsane-extras/squeeze uptodate 1.0.21.2
libsasl2-2/squeeze uptodate 2.1.23.dfsg1-7
libsasl2-modules/squeeze uptodate 2.1.23.dfsg1-7
libschroedinger-1.0-0/squeeze uptodate 1.0.9-2
libsdl1.2debian/squeeze uptodate 1.2.14-6.1
libsdl1.2debian-alsa/squeeze uptodate 1.2.14-6.1
libseed0/squeeze uptodate 2.30.0-1+b1
libselinux1/squeeze uptodate 2.0.96-1
libsepol1/squeeze uptodate 2.0.41-1
libsgutils2-2/squeeze uptodate 1.29-1
libshout3/squeeze uptodate 2.2.2-5+b1
libsidplay1/squeeze uptodate 1.36.59-5
libsigc++-2.0-0c2a/squeeze uptodate 2.2.4.2-1

libslab0a/squeeze uptodate 2.30.0-1
libslang2/squeeze uptodate 2.2.2-4
libslv2-9/squeeze uptodate 0.6.6-5
libsm6/squeeze uptodate 2:1.1.1-1
libsmbclient/squeeze upgradeable from 2:3.5.6~dfsg-3squeeze4 to 2:3.5.6~dfsg-3squeeze5
libsndfile1/squeeze upgradeable from 1.0.21-3 to 1.0.21-3+squeeze1
libsoundtouch1c2/squeeze uptodate 1.3.1-2
libsoup-gnome2.4-1/squeeze uptodate 2.30.2-1
libsoup2.4-1/squeeze uptodate 2.30.2-1
libspectre1/squeeze uptodate 0.2.6-1
libspeex1/squeeze uptodate 1.2~rc1-1
libspeexdsp1/squeeze uptodate 1.2~rc1-1
libsqlite3-0/squeeze uptodate 3.7.3-1
libsrtp0/squeeze uptodate 1.4.4~dfsg-6
libss2/squeeze uptodate 1.41.12-4stable1
libssh-4/squeeze uptodate 0.4.5-3
libssl0.9.8/squeeze upgradeable from 0.9.8o-4squeeze1 to 0.9.8o-4squeeze4
libstartup-notification0/squeeze uptodate 0.10-1
libstdc++6/squeeze uptodate 4.4.5-8
libstdc++6-4.4-dev/squeeze uptodate 4.4.5-8
libsvga1/squeeze uptodate 1:1.4.3-29
libswscale0/squeeze upgradeable from 4:0.5.2-6 to 4:0.5.5-1
libsysfs2/squeeze uptodate 2.1.0+repack-1
libt1-5/squeeze uptodate 5.1.2-3
libtag1-vanilla/squeeze uptodate 1.6.3-1
libtag1c2a/squeeze uptodate 1.6.3-1
libtalloc2/squeeze uptodate 2.0.1-1
libtasn1-3/squeeze uptodate 2.7-1
libtdb1/squeeze uptodate 1.2.1-2+b1
libtelepathy-farsight0/squeeze uptodate 0.0.14-2+b1
libtelepathy-glib0/squeeze uptodate 0.11.11-1
libterm-readkey-perl/squeeze uptodate 2.30-4
libtext-charwidth-perl/squeeze uptodate 0.04-6
libtext-iconv-perl/squeeze uptodate 1.7-2
libtext-wrapi18n-perl/squeeze uptodate 0.06-7
libthai-data/squeeze uptodate 0.1.14-2
libthai0/squeeze uptodate 0.1.14-2
libtheora0/squeeze uptodate 1.1.1+dfsg.1-3
libtidy-0.99-0/squeeze uptodate 20091223cvs-1
libtie-ixhash-perl/squeeze uptodate 1.21-2
libtiff4/squeeze uptodate 3.9.4-5+squeeze3
libtimedate-perl/squeeze uptodate 1.2000-1
libtokyocabinet8/squeeze uptodate 1.4.37-6
libtool/squeeze uptodate 2.2.6b-2
libtotem-plparser17/squeeze uptodate 2.30.3-1
libtracker-client-0.8-0/squeeze uptodate 0.8.17-1
libts-0.0-0/squeeze uptodate 1.0-7
libtwolame0/squeeze uptodate 0.3.12-1
libudev0/squeeze uptodate 164-3
libunique-1.0-0/squeeze uptodate 1.1.6-1.1
libunistring0/squeeze uptodate 0.9.3-3
libupower-glib1/squeeze uptodate 0.9.5-5
liburi-perl/squeeze uptodate 1.54-2
libusb-0.1-4/squeeze uptodate 2:0.1.12-16
libusb-1.0-0/squeeze uptodate 2:1.0.8-2
libusbmuxd1/squeeze uptodate 1.0.4-1

libutempter0/squeeze uptodate 1.1.5-3
libuuid-perl/squeeze uptodate 0.02-4
libuuid1/squeeze uptodate 2.17.2-9
libv4l-0/squeeze uptodate 0.8.0-1
libvisual-0.4-0/squeeze uptodate 0.4.0-3
libvisual-0.4-plugins/squeeze uptodate 0.4.0.dfsg.1-2
libvorbis0a/squeeze uptodate 1.3.1-1
libvorbisenc2/squeeze uptodate 1.3.1-1
libvorbisfile3/squeeze uptodate 1.3.1-1
libvpx0/squeeze uptodate 0.9.1-2
libvte-common/squeeze upgradeable from 1:0.24.3-2 to 1:0.24.3-3
libvte9/squeeze upgradeable from 1:0.24.3-2 to 1:0.24.3-3
libwavpack1/squeeze uptodate 4.60.1-1
libwbclient0/squeeze upgradeable from 2:3.5.6~dfsg-3squeeze4 to 2:3.5.6~dfsg-3squeeze5
libwebkit-1.0-2/squeeze uptodate 1.2.7-0+squeeze1
libwebkit-1.0-common/squeeze uptodate 1.2.7-0+squeeze1
libwildmidi1/squeeze uptodate 0.2.3.2-2
libwmf-bin/squeeze uptodate 0.2.8.4-6.1+b1
libwmf0.2-7/squeeze uptodate 0.2.8.4-6.1+b1
libwnck-common/squeeze uptodate 2.30.4-2
libwnck22/squeeze uptodate 2.30.4-2
libwpd8c2a/squeeze uptodate 0.8.14-1
libwpg-0.1-1/squeeze uptodate 0.1.3-1
libwps-0.1-1/squeeze uptodate 0.1.2-1
libwrap0/squeeze uptodate 7.6.q-19
libwv-1.2-3/squeeze uptodate 1.2.4-2+b1
libwww-perl/squeeze uptodate 5.836-1
libx11-6/squeeze uptodate 2:1.3.3-4
libx11-data/squeeze uptodate 2:1.3.3-4
libx11-xcb1/squeeze uptodate 2:1.3.3-4
libx86-1/squeeze uptodate 1.1+ds1-6
libxapian22/squeeze uptodate 1.2.3-2
libxau6/squeeze uptodate 1:1.0.6-1
libxaw7/squeeze uptodate 2:1.0.7-1
libxcb-atom1/squeeze uptodate 0.3.6-1
libxcb-aux0/squeeze uptodate 0.3.6-1
libxcb-dri2-0/squeeze uptodate 1.6-1
libxcb-event1/squeeze uptodate 0.3.6-1
libxcb-render-util0/squeeze uptodate 0.3.6-1
libxcb-render0/squeeze uptodate 1.6-1
libxcb1/squeeze uptodate 1.6-1
libxcomposite1/squeeze uptodate 1:0.4.2-1
libxcursor1/squeeze uptodate 1:1.1.10-2
libxdamage1/squeeze uptodate 1:1.1.3-1
libxdmcp6/squeeze uptodate 1:1.0.3-2
libxdot4/squeeze uptodate 2.26.3-5
libxext6/squeeze uptodate 2:1.1.2-1
libxfixes3/squeeze uptodate 1:4.0.5-1
libxfont1/squeeze upgradeable from 1:1.4.1-2 to 1:1.4.1-3
libxft2/squeeze uptodate 2.1.14-2
libxi6/squeeze uptodate 2:1.3-6
libxinerama1/squeeze uptodate 2:1.1-3
libxkbfile1/squeeze uptodate 1:1.0.6-2
libxklavier16/squeeze uptodate 5.0-2
libxml-parser-perl/squeeze uptodate 2.36-1.1+b1
libxml-twig-perl/squeeze uptodate 1:3.34-1

libxml-xpathengine-perl/squeeze uptodate 0.12-2
libxml2/squeeze uptodate 2.7.8.dfsg-2+squeeze1
libxml2-utils/squeeze uptodate 2.7.8.dfsg-2+squeeze1
libxmu6/squeeze uptodate 2:1.0.5-2
libxmuu1/squeeze uptodate 2:1.0.5-2
libxpm4/squeeze uptodate 1:3.5.8-1
libxrandr2/squeeze uptodate 2:1.3.0-3
libxrender1/squeeze uptodate 1:0.9.6-1
libxres1/squeeze uptodate 2:1.0.4-1
libxslt1.1/squeeze uptodate 1.1.26-6
libxss1/squeeze uptodate 1:1.2.0-2
libxt6/squeeze uptodate 1:1.0.7-1
libxtst6/squeeze uptodate 2:1.1.0-3
libxv1/squeeze uptodate 2:1.0.5-1
libxvmc1/squeeze uptodate 2:1.0.5-1
libxxf86dga1/squeeze uptodate 2:1.1.1-2
libxxf86vm1/squeeze uptodate 1:1.1.0-2
libyaml-0-2/squeeze uptodate 0.1.3-1
libyaml-dev/squeeze uptodate 0.1.3-1
libzbar0/squeeze uptodate 0.10+doc-4
liferea/squeeze uptodate 1.6.4-1
liferea-data/squeeze uptodate 1.6.4-1
link-grammar-dictionaries-en/squeeze uptodate 4.6.7-1
linux-base/squeeze upgradeable from 2.6.32-35 to 2.6.32-39
linux-image-2.6-686/squeeze uptodate 2.6.32+29
linux-image-2.6.32-5-686/squeeze upgradeable from 2.6.32-35 to 2.6.32-39
linux-libc-dev/squeeze upgradeable from 2.6.32-38 to 2.6.32-39
linux-sound-base/squeeze uptodate 1.0.23+dfsg-2
locales/squeeze uptodate 2.11.2-10
login/squeeze uptodate 1:4.1.4.2+svn3283-2+squeeze1
logrotate/squeeze uptodate 3.7.8-6
lp-solve/squeeze uptodate 5.5.0.13-7
lsb-base/squeeze uptodate 3.2-23.2squeeze1
lsb-release/squeeze uptodate 3.2-23.2squeeze1
lsof/squeeze uptodate 4.81.dfsg.1-1
m4/squeeze uptodate 1.4.14-3
make/squeeze uptodate 3.81-8
man-db/squeeze uptodate 2.5.7-8
manpages/squeeze uptodate 3.27-1
manpages-dev/squeeze uptodate 3.27-1
mawk/squeeze uptodate 1.3.3-15
media-player-info/squeeze uptodate 6-1
menu/squeeze uptodate 2.1.44
menu-xdg/squeeze uptodate 0.5
mesa-utils/squeeze upgradeable from 7.7.1-4 to 7.7.1-5
metacity/squeeze uptodate 1:2.30.1-3
metacity-common/squeeze uptodate 1:2.30.1-3
mime-support/squeeze uptodate 3.48-1
mlocate/squeeze uptodate 0.22.2-1
mobile-broadband-provider-info/squeeze uptodate 20101106-1
modemmanager/squeeze uptodate 0.4+git.20100624t180933.6e79d15-2
module-init-tools/squeeze uptodate 3.12-1
mono-2.0-gac/squeeze uptodate 2.6.7-5
mono-gac/squeeze uptodate 2.6.7-5
mono-runtime/squeeze uptodate 2.6.7-5
mount/squeeze uptodate 2.17.2-9

mousetweaks/squeeze uptodate 2.30.2-1
mozilla-plugin-gnash/squeeze uptodate 0.8.8-5
mtools/squeeze uptodate 4.0.12-1
mutt/squeeze uptodate 1.5.20-9+squeeze1
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nautilus/squeeze uptodate 2.30.1-2squeeze1
nautilus-data/squeeze uptodate 2.30.1-2squeeze1
nautilus-sendto/squeeze uptodate 2.28.4-2+b1
nautilus-sendto-empathy/squeeze uptodate 2.30.3-1
ncurses-base/squeeze uptodate 5.7+20100313-5
ncurses-bin/squeeze uptodate 5.7+20100313-5
ncurses-term/squeeze uptodate 5.7+20100313-5
net-tools/squeeze uptodate 1.60-23
netbase/squeeze uptodate 4.45
netcat-traditional/squeeze uptodate 1.10-38
netpbm/squeeze uptodate 2:10.0-12.2+b1
network-manager/squeeze uptodate 0.8.1-6+squeeze1
network-manager-gnome/squeeze uptodate 0.8.1-2
nfs-common/squeeze uptodate 1:1.2.2-4
notification-daemon/squeeze uptodate 0.5.0-2
ntfs-3g/squeeze uptodate 1:2010.3.6-1
ntfsprogs/squeeze uptodate 2.0.0-1+b1
obex-data-server/squeeze uptodate 0.4.5-1+b1
obexd-client/squeeze uptodate 0.28-1
ocaml-base-nox/squeeze uptodate 3.11.2-2
openjdk-6-jre/squeeze upgradeable from 6b18-1.8.7-2~squeeze1 to 6b18-1.8.10-0+squeeze2
openjdk-6-jre-headless/squeeze upgradeable from 6b18-1.8.7-2~squeeze1 to 6b18-1.8.10-0+squeeze2
openjdk-6-jre-lib/squeeze upgradeable from 6b18-1.8.7-2~squeeze1 to 6b18-1.8.10-0+squeeze2
openssh-blacklist/squeeze uptodate 0.4.1
openssh-blacklist-extra/squeeze uptodate 0.4.1
openssh-client/squeeze upgradeable from 1:5.5p1-6 to 1:5.5p1-6+squeeze1
openssh-server/squeeze upgradeable from 1:5.5p1-6 to 1:5.5p1-6+squeeze1
openssl/squeeze upgradeable from 0.9.8o-4squeeze1 to 0.9.8o-4squeeze4
os-prober/squeeze uptodate 1.42
p7zip-full/squeeze uptodate 9.04~dfsg.1-1
passwd/squeeze uptodate 1:4.1.4.2+svn3283-2+squeeze1
patch/squeeze uptodate 2.6-2
pciutils/squeeze uptodate 1:3.1.7-6
perl/squeeze uptodate 5.10.1-17squeeze2
perl-base/squeeze uptodate 5.10.1-17squeeze2
perl-modules/squeeze uptodate 5.10.1-17squeeze2
perlmagick/squeeze uptodate 8:6.6.0.4-3
pkg-config/squeeze uptodate 0.25-1.1
pm-utils/squeeze uptodate 1.3.0-3
policykit-1/squeeze upgradeable from 0.96-4 to 0.96-4+squeeze1
policykit-1-gnome/squeeze uptodate 0.96-3
poppler-utils/squeeze uptodate 0.12.4-1.2
portmap/squeeze uptodate 6.0.0-2
powermgmt-base/squeeze uptodate 1.31
ppp/squeeze uptodate 2.4.5-4
procmail/squeeze uptodate 3.22-19
procps/squeeze uptodate 1:3.2.8-9
psmisc/squeeze uptodate 22.11-1
pstoedit/squeeze uptodate 3.50-3+b1
python/squeeze uptodate 2.6.6-3+squeeze6
python-apt/squeeze uptodate 0.7.100.1+squeeze1

python-apt-common/squeeze uptodate 0.7.100.1+squeeze1
python-aptdaemon/squeeze uptodate 0.31+bzr413-1.1
python-aptdaemon-gtk/squeeze uptodate 0.31+bzr413-1.1
python-axiom/squeeze uptodate 0.6.0-2
python-beautifulsoup/squeeze uptodate 3.1.0.1-2
python-brlapi/squeeze upgradeable from 4.2-7 to 4.2-7+squeeze1
python-bugbuddy/squeeze uptodate 2.30.0-4
python-cairo/squeeze uptodate 1.8.8-1+b1
python-central/squeeze uptodate 0.6.16+nmu1
python-chardet/squeeze uptodate 2.0.1-1
python-clientform/squeeze uptodate 0.2.10-2.1
python-coherence/squeeze uptodate 0.6.6.2-5
python-configobj/squeeze uptodate 4.7.2+ds-1
python-crypto/squeeze uptodate 2.1.0-2
python-cups/squeeze uptodate 1.9.48-1
python-cupshelpers/squeeze uptodate 1.2.3-3
python-dbus/squeeze uptodate 0.83.1-1
python-debian/squeeze uptodate 0.1.18
python-epsilon/squeeze uptodate 0.6.0-3
python-evolution/squeeze uptodate 2.30.0-4
python-feedparser/squeeze uptodate 4.1-14
python-gconf/squeeze uptodate 2.28.1-1
python-gdata/squeeze uptodate 2.0.8-1.1
python-gdbm/squeeze uptodate 2.6.6-1
python-glade2/squeeze uptodate 2.17.0-4
python-gmenu/squeeze uptodate 2.30.3-1
python-gnome2/squeeze uptodate 2.28.1-1
python-gnomeapplet/squeeze uptodate 2.30.0-4
python-gnomedesktop/squeeze uptodate 2.30.0-4
python-gnomekeyring/squeeze uptodate 2.30.0-4
python-gnupginterface/squeeze uptodate 0.3.2-9.1
python-gobject/squeeze uptodate 2.21.4+is.2.21.3-1
python-gst0.10/squeeze uptodate 0.10.19-1
python-gtk2/squeeze uptodate 2.17.0-4
python-gtkglext1/squeeze uptodate 1.1.0-5
python-gtksourceview2/squeeze uptodate 2.10.1-1
python-httplib2/squeeze uptodate 0.6.0-4
python-libxml2/squeeze uptodate 2.7.8.dfsg-2+squeeze1
python-louie/squeeze uptodate 1.1-1.1
python-louis/squeeze uptodate 2.0.0-1
python-mako/squeeze uptodate 0.3.4-5
python-markupsafe/squeeze uptodate 0.9.2-3
python-mechanize/squeeze uptodate 0.1.11-1.1
python-minimal/squeeze uptodate 2.6.6-3+squeeze6
python-nevow/squeeze uptodate 0.10.0-2
python-notify/squeeze uptodate 0.1.1-2+b2
python-numpy/squeeze uptodate 1:1.4.1-5
python-opengl/squeeze uptodate 3.0.1~b2-1
python-openssl/squeeze uptodate 0.10-1
python-pam/squeeze uptodate 0.4.2-12.2
python-pkg-resources/squeeze uptodate 0.6.14-4
python-pyasn1/squeeze uptodate 0.0.11a-1
python-pyatspi/squeeze uptodate 1.30.1-3
python-pyorbit/squeeze uptodate 2.24.0-6
python-pysqlite2/squeeze uptodate 2.6.0-1
python-rdflib/squeeze uptodate 2.4.2-1+b1

python-reportbug/squeeze uptodate 4.12.6
python-serial/squeeze uptodate 2.3-1
python-software-properties/squeeze uptodate 0.60.debian-3
python-support/squeeze uptodate 1.0.10
python-tagpy/squeeze uptodate 0.94.7-2
python-twisted-bin/squeeze uptodate 10.1.0-3
python-twisted-conch/squeeze uptodate 1:10.1.0-1
python-twisted-core/squeeze uptodate 10.1.0-3
python-twisted-web/squeeze uptodate 10.1.0-1
python-utidylib/squeeze uptodate 0.2-6
python-vte/squeeze upgradeable from 1:0.24.3-2 to 1:0.24.3-3
python-webkit/squeeze uptodate 1.1.7-1+b1
python-wnck/squeeze uptodate 2.30.0-4
python-xapian/squeeze uptodate 1.2.3-3
python-xdg/squeeze uptodate 0.19-2
python-zope.interface/squeeze uptodate 3.5.3-1+b1
python2.6/squeeze uptodate 2.6.6-8+b1
python2.6-minimal/squeeze uptodate 2.6.6-8+b1
radeontool/squeeze uptodate 1.6.1-1
rarian-compat/squeeze uptodate 0.8.1-5
readline-common/squeeze uptodate 6.1-3
remmina/squeeze uptodate 0.8.3-1
remmina-plugin-data/squeeze uptodate 0.8.3-2
remmina-plugin-rdp/squeeze uptodate 0.8.3-2
remmina-plugin-vnc/squeeze uptodate 0.8.3-2
reportbug/squeeze uptodate 4.12.6
rhythmbox/squeeze uptodate 0.12.8-3
rhythmbox-plugin-cdrecorder/squeeze uptodate 0.12.8-3
rhythmbox-plugins/squeeze uptodate 0.12.8-3
rpm-common/squeeze uptodate 4.8.1-6
rpm2cpio/squeeze uptodate 4.8.1-6
rsync/squeeze uptodate 3.0.7-2
rsyslog/squeeze uptodate 4.6.4-2
sane-utils/squeeze uptodate 1.0.21-9
screen/squeeze uptodate 4.0.3-14
seahorse/squeeze uptodate 2.30.1-2
seahorse-plugins/squeeze uptodate 2.30.1-3
sed/squeeze uptodate 4.2.1-7
sensible-utils/squeeze uptodate 0.0.4
sgml-base/squeeze uptodate 1.26+nmu1
sgml-data/squeeze uptodate 2.0.4
shared-mime-info/squeeze uptodate 0.71-4
shotwell/squeeze uptodate 0.6.1-1+b2
simple-scan/squeeze uptodate 2.31.1-1
software-center/squeeze uptodate 2.0.7debian7
software-properties-gtk/squeeze uptodate 0.60.debian-3
sound-juicer/squeeze uptodate 2.28.2-3
ssh/squeeze upgradeable from 1:5.5p1-6 to 1:5.5p1-6+squeeze1
sudo/squeeze uptodate 1.7.4p4-2.squeeze.2
synaptic/squeeze uptodate 0.70~pre1+b1
system-config-printer/squeeze uptodate 1.2.3-3
system-config-printer-udev/squeeze uptodate 1.2.3-3
system-tools-backends/squeeze upgradeable from 2.10.1-2 to 2.10.1-2squeeze1
sysv-rc/squeeze uptodate 2.88dsf-13.1
sysv-rc-conf/squeeze uptodate 0.99-6
sysvinit/squeeze uptodate 2.88dsf-13.1

sysvinit-utils/squeeze uptodate 2.88dsf-13.1
tar/squeeze uptodate 1.23-3
tasksel/squeeze uptodate 2.88
tasksel-data/squeeze uptodate 2.88
tcl/squeeze uptodate 8.4.16-2
tcl8.4/squeeze uptodate 8.4.19-4
tcpd/squeeze uptodate 7.6.q-19
tcptraceroute/squeeze uptodate 1.5beta7+debian-4
telepathy-gabble/squeeze uptodate 0.9.15-1+squeeze1
telepathy-mission-control-5/squeeze uptodate 1:5.4.3-1
telepathy-salut/squeeze uptodate 0.3.12-1
telnet/squeeze uptodate 0.17-36
texinfo/squeeze uptodate 4.13a.dfsg.1-6
time/squeeze uptodate 1.7-23.1
tomboy/squeeze uptodate 1.2.2-2
totem/squeeze uptodate 2.30.2-6
totem-coherence/squeeze uptodate 2.30.2-6
totem-common/squeeze uptodate 2.30.2-6
totem-mozilla/squeeze uptodate 2.30.2-6
totem-plugins/squeeze uptodate 2.30.2-6
traceroute/squeeze uptodate 1:2.0.15-1
transmission-common/squeeze uptodate 2.03-2
transmission-gtk/squeeze uptodate 2.03-2
tsconf/squeeze uptodate 1.0-7
ttf-dejavu/squeeze uptodate 2.31-1
ttf-dejavu-core/squeeze uptodate 2.31-1
ttf-dejavu-extra/squeeze uptodate 2.31-1
ttf-liberation/squeeze uptodate 1.05.2.20091019-4squeeze1
ttf-lyx/squeeze uptodate 1.6.7-1
tzdata/squeeze upgradeable from 2011d-0squeeze1 to 2011n-0squeeze1
tzdata-java/squeeze upgradeable from 2011d-0squeeze1 to 2011n-0squeeze1
ucf/squeeze uptodate 3.0025+nmu1
udev/squeeze uptodate 164-3
udisks/squeeze uptodate 1.0.1+git20100614-3
ufraw-batch/squeeze uptodate 0.16-3+b1
unattended-upgrades/squeeze uptodate 0.62.2
unzip/squeeze uptodate 6.0-4
update-inetd/squeeze upgradeable from 4.38+nmu1 to 4.38+nmu1+squeeze1
update-manager-core/squeeze uptodate 0.200.5-1
update-manager-gnome/squeeze uptodate 0.200.5-1
update-notifier/squeeze uptodate 0.99.3debian8
update-notifier-common/squeeze uptodate 0.99.3debian8
upower/squeeze uptodate 0.9.5-5
usb-modeswitch/squeeze uptodate 1.1.4-2
usb-modeswitch-data/squeeze uptodate 20100826-1+squeeze0
usbmuxd/squeeze uptodate 1.0.4-1
usbutils/squeeze upgradeable from 0.87-5 to 0.87-5squeeze1
util-linux/squeeze uptodate 2.17.2-9
vbetool/squeeze uptodate 1.1-2
vim-common/squeeze uptodate 2:7.2.445+hg~cb94c42c0e1a-1
vim-tiny/squeeze uptodate 2:7.2.445+hg~cb94c42c0e1a-1
vino/squeeze uptodate 2.28.2-2+squeeze1
w3m/squeeze uptodate 0.5.2-9
wamerican/squeeze uptodate 6-3
wget/squeeze uptodate 1.12-2.1
whiptail/squeeze uptodate 0.52.11-1

whois/squeeze uptodate 5.0.10
wpasupplicant/squeeze uptodate 0.6.10-2.1
x-ttcidfont-conf/squeeze uptodate 32
x11-apps/squeeze uptodate 7.5+5
x11-common/squeeze uptodate 1:7.5+8
x11-session-utils/squeeze uptodate 7.5+1
x11-utils/squeeze uptodate 7.5+4
x11-xfs-utils/squeeze uptodate 7.4+1
x11-xkb-utils/squeeze uptodate 7.5+5
x11-xserver-utils/squeeze uptodate 7.5+3
xauth/squeeze uptodate 1:1.0.4-1
xbase-clients/squeeze uptodate 1:7.5+8
xbitmaps/squeeze uptodate 1.1.0-1
xdg-user-dirs/squeeze uptodate 0.13-2
xdg-user-dirs-gtk/squeeze uptodate 0.8-1
xdg-utils/squeeze uptodate 1.0.2+cvs20100307-2
xfonts-100dpi/squeeze uptodate 1:1.0.1
xfonts-75dpi/squeeze uptodate 1:1.0.1
xfonts-base/squeeze uptodate 1:1.0.1
xfonts-encodings/squeeze uptodate 1:1.0.3-1
xfonts-scalable/squeeze uptodate 1:1.0.1-1
xfonts-utils/squeeze uptodate 1:7.5+2
xinit/squeeze uptodate 1.2.0-2
xkb-data/squeeze uptodate 1.8-2
xml-core/squeeze uptodate 0.13
xorg/squeeze uptodate 1:7.5+8
xorg-docs-core/squeeze uptodate 1:1.5-1
xserver-common/squeeze uptodate 2:1.7.7-13
xserver-xephyr/squeeze uptodate 2:1.7.7-13
xserver-xorg/squeeze uptodate 1:7.5+8
xserver-xorg-core/squeeze uptodate 2:1.7.7-13
xserver-xorg-input-all/squeeze uptodate 1:7.5+8
xserver-xorg-input-evdev/squeeze uptodate 1:2.3.2-6
xserver-xorg-input-synaptics/squeeze uptodate 1.2.2-2
xserver-xorg-input-wacom/squeeze uptodate 0.10.5+20100416-1
xserver-xorg-video-all/squeeze uptodate 1:7.5+8
xserver-xorg-video-apm/squeeze uptodate 1:1.2.2-2
xserver-xorg-video-ark/squeeze uptodate 1:0.7.2-2
xserver-xorg-video-ati/squeeze uptodate 1:6.13.1-2+squeeze1
xserver-xorg-video-chips/squeeze uptodate 1:1.2.3-1
xserver-xorg-video-cirrus/squeeze uptodate 1:1.3.2-2+squeeze1
xserver-xorg-video-fbdev/squeeze uptodate 1:0.4.2-2
xserver-xorg-video-geode/squeeze uptodate 2.11.9-7
xserver-xorg-video-i128/squeeze uptodate 1:1.3.3-2
xserver-xorg-video-i740/squeeze uptodate 1:1.3.2-2
xserver-xorg-video-intel/squeeze uptodate 2:2.13.0-6
xserver-xorg-video-mach64/squeeze uptodate 6.8.2-3
xserver-xorg-video-mga/squeeze uptodate 1:1.4.11.dfsg-4+squeeze1
xserver-xorg-video-neomagic/squeeze uptodate 1:1.2.4-3
xserver-xorg-video-nouveau/squeeze uptodate 1:0.0.15+git20100329+7858345-5
xserver-xorg-video-nv/squeeze uptodate 1:2.1.17-3
xserver-xorg-video-openchrome/squeeze uptodate 1:0.2.904+svn842-2
xserver-xorg-video-r128/squeeze uptodate 6.8.1-3
xserver-xorg-video-radeon/squeeze uptodate 1:6.13.1-2+squeeze1
xserver-xorg-video-rendition/squeeze uptodate 1:4.2.3-3
xserver-xorg-video-s3/squeeze uptodate 1:0.6.3-2

xserver-xorg-video-s3virge/squeeze uptodate 1:1.10.4-2
xserver-xorg-video-savage/squeeze uptodate 1:2.3.1-2
xserver-xorg-video-siliconmotion/squeeze uptodate 1:1.7.3-2
xserver-xorg-video-sis/squeeze uptodate 1:0.10.3-1
xserver-xorg-video-sisusb/squeeze uptodate 1:0.9.3-2
xserver-xorg-video-tdfx/squeeze uptodate 1:1.4.3-2
xserver-xorg-video-trident/squeeze uptodate 1:1.3.3-2
xserver-xorg-video-tseng/squeeze uptodate 1:1.2.3-2+squeeze1
xserver-xorg-video-vesa/squeeze uptodate 1:2.3.0-3
xserver-xorg-video-vmware/squeeze uptodate 1:11.0.1-2
xserver-xorg-video-voodoo/squeeze uptodate 1:1.2.3-2
xsltproc/squeeze uptodate 1.1.26-6
xterm/squeeze uptodate 261-1
xz-utils/squeeze uptodate 5.0.0-2
yelp/squeeze uptodate 2.30.1+webkit-1
zenity/squeeze uptodate 2.30.0-1
zlib1g/squeeze uptodate 1:1.2.3.4.dfsg-3
zlib1g-dev/squeeze uptodate 1:1.2.3.4.dfsg-3

Appendix C: Suricata Configuration

The following is the "control group" configuration used as a baseline for testing:

```
%YAML 1.1
---

# Suricata configuration file. In addition to the comments describing all
# options in this file, full documentation can be found at:
# https://redmine.openinfosecfoundation.org/projects/suricata/wiki/Suricatayaml


# Number of packets allowed to be processed simultaneously.  Default is a
# conservative 50. a higher number will make sure CPU's/CPU cores will be
# more easily kept busy, but will negatively impact caching.
#
# If you are using the CUDA pattern matcher (b2g_cuda below), different rules
# apply. In that case try something like 4000 or more. This is because the CUDA
# pattern matcher scans many packets in parallel.
#max-pending-packets: 50

# Runmode custom mode the engine should run in.  Please check --list-runmodes
# to get the runmode custom modes that can be used here for a particular runmode.
#runmode: auto

# Preallocated size for packet. Default is 1514 which is the classical
# size for pcap on ethernet. You should adjust this value to the highest
# packet size (MTU + hardware header) on your system.
#default-packet-size: 1514

# Set the order of alerts bassed on actions
# The default order is pass, drop, reject, alert
action-order:
  - pass
  - drop
  - reject
  - alert


# The default logging directory.  Any log or output file will be
# placed here if its not specified with a full path name.  This can be
# overridden with the -l command line parameter.
default-log-dir: /var/log/suricata

# Configure the type of alert (and other) logging you would like.
outputs:

  # a line based alerts log similar to Snort's fast.log
  - fast:
      enabled: yes
      filename: fast.log
      append: yes

  # log output for use with Barnyard
  - unified-log:
```

```
    enabled: no
    filename: unified.log

    # Limit in MB.
    #limit: 32

# alert output for use with Barnyard
- unified-alert:
    enabled: no
    filename: unified.alert

    # Limit in MB.
    #limit: 32

# alert output for use with Barnyard2
- unified2-alert:
    enabled: yes
    filename: unified2.alert

    # Limit in MB.
    #limit: 32

# a line based log of HTTP requests (no alerts)
- http-log:
    enabled: yes
    filename: http.log
    append: yes

# a line based log to used with pcap file study.
# this module is dedicated to offline pcap parsing (empty output
# if used with an other kind of input). It can interoperate with
# pcap parser like wireshark via the suriwire plugin.
- pcap-info:
    enabled: no

# Packet log... log packets in pcap format. 2 modes of operation: "normal"
# and "sguil".
#
# In normal mode a pcap file "filename" is created in the default-log-dir,
# or are as specified by "dir". In Sguil mode "dir" indicates the base directory.
# In this base dir the pcaps are created in th directory structure Sguil expects:
#
# $sguil_base_dir/YYYY-MM-DD/$filename.<timestamp>
#
# By default all packets are logged except:
# - TCP streams beyond stream.reassembly.depth
# - encrypted streams after the key exchange
#
- pcap-log:
    enabled:  no
    filename: log.pcap

    # Limit in MB.
    limit: 1000

    # If set to a value will enable ring buffer mode. Will keep Maximum of "max_files" of size "limit"
```

```
    max_files: 2000

    mode: normal # normal or sguil.
    #dir: /nsm_data/
    #ts_format: usec # sec or usec second format (default) is filename.sec usec is filename.sec.usec
    use_stream_depth: no #If set to "yes" packets seen after reaching stream inspection depth are ignored.
"no" logs all packets

 # a full alerts log containing much information for signature writers
 # or for investigating suspected false positives.
 - alert-debug:
    enabled: no
    filename: alert-debug.log
    append: yes

 # alert output to prelude (http://www.prelude-technologies.com/) only
 # available if Suricata has been compiled with --enable-prelude
 - alert-prelude:
    enabled: no
    profile: suricata
    log_packet_content: no
    log_packet_header: yes

 # Stats.log contains data from various counters of the suricata engine.
 # The interval field (in seconds) tells after how long output will be written
 # on the log file.
 - stats:
    enabled: yes
    filename: stats.log
    interval: 8

 # a line based alerts log similar to fast.log into syslog
 - syslog:
    enabled: no
    # reported identity to syslog. If ommited the program name (usually
    # suricata) will be used.
    #identity: "suricata"
    facility: local5
    #level: Info ## possible levels: Emergency, Alert, Critical,
             ## Error, Warning, Notice, Info, Debug
 # a line based information for dropped packet
 - drop:
    enabled: yes
    filename: drop.log
    append: yes


# When running in NFQ inline mode, it is possible to use a simulated
# non-terminal NFQUEUE verdict.
# This permit to do send all needed packet to suricata via this a rule:
#      iptables -I FORWARD -m mark ! --mark $MARK/$MASK -j NFQUEUE
# And below, you can have your standard filtering ruleset. To activate
# this mode, you need to set mode to 'repeat'
# If you want packet to be sent to another queue after an ACCEPT decision
# set mode to 'route' and set next_queue value.
nfq:
```

```
#  mode: accept
#  repeat_mark: 1
#  repeat_mask: 1
#  route_queue: 2

# af-packet support
# Set threads to > 1 to use PACKET_FANOUT support
af-packet:
  - interface: eth0
    # Number of receive threads (>1 will enable experimental flow pinned
    # runmode)
    threads: 1
    # Default clusterid.  AF_PACKET will load balance packets based on flow.
    # All threads/processes that will participate need to have the same
    # clusterid.
    cluster-id: 99
    # Default AF_PACKET cluster type. AF_PACKET can load balance per flow or per hash.
    # This is only supported for Linux kernel > 3.1
    # possible value are:
    #  * cluster_round_robin: round robin load balancing
    #  * cluster_flow: all packets of a given flow are send to the same socket
    #  * cluster_cpu: all packets treated in kernel by a CPU are send to the same socket
    cluster-type: cluster_round_robin
    # In some fragmentation case, the hash can not be computed. If "defrag" is set
    # to yes, the kernel will do the needed defragmentation before sending the packets.
    defrag: yes
    # recv buffer size, increase value could improve performance
    # buffer-size: 32768
    # Set to yes to disable promiscuous mode
    # disable-promisc: no
  - interface: eth1
    threads: 1
    cluster-id: 98
    cluster-type: cluster_round_robin
    defrag: yes
    # buffer-size: 32768
    # disable-promisc: no

defrag:
  max-frags: 65535
  prealloc: yes
  timeout: 60

# When run with the option --engine-analysis, the engine will read each of
# the parameters below, and print reports for each of the enabled sections
# and exit.  The reports are printed to a file in the default log dir
# given by the parameter "default-log-dir", with engine reporting
# subsection below printing reports in its own report file.
engine-analysis:
  # enables printing reports for fast-pattern for every rule.
  rules-fast-pattern: yes

#recursion and match limits for PCRE where supported
pcre:
  match-limit: 3500
  match-limit-recursion: 1500
```

```
# You can specify a threshold config file by setting "threshold-file"
# to the path of the threshold config file:
# threshold-file: /etc/suricata/threshold.config

# The detection engine builds internal groups of signatures. The engine
# allow us to specify the profile to use for them, to manage memory on an
# efficient way keeping a good performance. For the profile keyword you
# can use the words "low", "medium", "high" or "custom". If you use custom
# make sure to define the values at "- custom-values" as your convenience.
# Usually you would prefer medium/high/low.
#
# "sgh mpm-context", indicates how the staging should allot mpm contexts for
# the signature groups.  "single" indicates the use of a single context for
# all the signature group heads.  "full" indicates a mpm_context for each
# group head.  "auto" lets the engine decide the distribution of contexts
# based on the information the engine gathers on the patterns from each
# group head.
#
# The option inspection_recursion_limit is used to limit the recursive calls
# in the content inspection code.  For certain payload-sig combinations, we
# might end up taking too much time in the content inspection code.
# If the argument specified is 0, the engine uses an internally defined
# default limit.  On not specifying a value, we use no limits on the recursion.
detect-engine:
  - profile: medium
  - custom-values:
      toclient_src_groups: 2
      toclient_dst_groups: 2
      toclient_sp_groups: 2
      toclient_dp_groups: 3
      toserver_src_groups: 2
      toserver_dst_groups: 4
      toserver_sp_groups: 2
      toserver_dp_groups: 25
  - sgh-mpm-context: auto
  - inspection-recursion-limit: 3000

# Suricata is multi-threaded. Here the threading can be influenced.
threading:
  # On some cpu's/architectures it is beneficial to tie individual threads
  # to specific CPU's/CPU cores. In this case all threads are tied to CPU0,
  # and each extra CPU/core has one "detect" thread.
  #
  # On Intel Core2 and Nehalem CPU's enabling this will degrade performance.
  #
  set_cpu_affinity: no
  # Tune cpu affinity of suricata threads. Each family of threads can be bound
  # on specific CPUs.
  cpu_affinity:
    - management_cpu_set:
      cpu: [ 0 ]  # include only these cpus in affinity settings
    - receive_cpu_set:
      cpu: [ 0 ]  # include only these cpus in affinity settings
    - decode_cpu_set:
      cpu: [ 0, 1 ]
```

```
        mode: "balanced"
    - stream_cpu_set:
      cpu: [ "0-1" ]
    - detect_cpu_set:
      cpu: [ "all" ]
      mode: "exclusive" # run detect threads in these cpus
      # Use explicitely 3 threads and don't compute number by using
      # detect_thread_ratio variable:
      # threads: 3
      prio:
        low: [ 0 ]
        medium: [ "1-2" ]
        high: [ 3 ]
        default: "medium"
    - verdict_cpu_set:
      cpu: [ 0 ]
      prio:
        default: "high"
    - reject_cpu_set:
      cpu: [ 0 ]
      prio:
        default: "low"
    - output_cpu_set:
      cpu: [ "all" ]
      prio:
        default: "medium"
  #
  # By default Suricata creates one "detect" thread per available CPU/CPU core.
  # This setting allows controlling this behaviour. A ratio setting of 2 will
  # create 2 detect threads for each CPU/CPU core. So for a dual core CPU this
  # will result in 4 detect threads. If values below 1 are used, less threads
  # are created. So on a dual core CPU a setting of 0.5 results in 1 detect
  # thread being created. Regardless of the setting at a minimum 1 detect
  # thread will always be created.
  #
  detect_thread_ratio: 1.5

# Cuda configuration.
cuda:
  # The "mpm" profile.  On not specifying any of these parameters, the engine's
  # internal default values are used, which are same as the ones specified here.
  - mpm:
      # Threshold limit for no of packets buffered to the GPU.  Once we hit this
      # limit, we pass the buffer to the gpu.
      packet_buffer_limit: 2400
      # The maximum length for a packet that we would buffer to the gpu.
      # Anything over this is MPM'ed on the CPU.  All entries > 0 are valid.
      packet_size_limit: 1500
      # No of packet buffers we initialize.  All entries > 0 are valid.
      packet_buffers: 10
      # The timeout limit for batching of packets in secs.  If we don't fill the
      # buffer within this timeout limit, we pass the currently filled buffer to the gpu.
      # All entries > 0 are valid.
      batching_timeout: 1
      # Specifies whether to use page_locked memory whereever possible.  Accepted values
      # are "enabled" and "disabled".
```

```
      page_locked: enabled
      # The device to use for the mpm.  Currently we don't support load balancing
      # on multiple gpus.  In case you have multiple devices on your system, you
      # can specify the device to use, using this conf.  By default we hold 0, to
      # specify the first device cuda sees.  To find out device_id associated with
      # the card(s) on the system run "suricata --list-cuda-cards".
      device_id: 0
      # No of Cuda streams used for asynchronous processing. All values > 0 are valid.
      # For this option you need a device with Compute Capability > 1.0 and
      # page_locked enabled to have any effect.
      cuda_streams: 2

# Select the multi pattern algorithm you want to run for scan/search the
# in the engine. The supported algorithms are b2g, b2gc, b2gm, b3g, wumanber,
# ac and ac-gfbs.
#
# The mpm you choose also decides the distribution of mpm contexts for
# signature groups, specified by the conf - "detect-engine.sgh_mpm_context".
# Selecting "ac" as the mpm would require "detect-engine.sgh_mpm_context"
# to be set to "single", because of ac's memory requirements, unless the
# ruleset is small enough to fit in one's memory, in which case one can
# use "full" with "ac".  Rest of the mpms can be run in "full" mode.
#
# There is also a CUDA pattern matcher (only available if Suricata was
# compiled with --enable-cuda: b2g_cuda. Make sure to update your
# max-pending-packets setting above as well if you use b2g_cuda.

mpm-algo: ac

# The memory settings for hash size of these algorithms can vary from lowest
# (2048) - low (4096) - medium (8192) - high (16384) - higher (32768) - max
# (65536). The bloomfilter sizes of these algorithms can vary from low (512) -
# medium (1024) - high (2048).
#
# For B2g/B3g algorithms, there is a support for two different scan/search
# algorithms. For B2g the scan algorithms are B2gScan & B2gScanBNDMq, and
# search algorithms are B2gSearch & B2gSearchBNDMq. For B3g scan algorithms
# are B3gScan & B3gScanBNDMq, and search algorithms are B3gSearch &
# B3gSearchBNDMq.
#
# For B2g the different scan/search algorithms and, hash and bloom
# filter size settings. For B3g the different scan/search algorithms and, hash
# and bloom filter size settings. For wumanber the hash and bloom filter size
# settings.

pattern-matcher:
  - b2gc:
    search_algo: B2gSearchBNDMq
    hash_size: low
    bf_size: medium
  - b2gm:
    search_algo: B2gSearchBNDMq
    hash_size: low
    bf_size: medium
  - b2g:
    search_algo: B2gSearchBNDMq
```

```
      hash_size: low
      bf_size: medium
   - b3g:
      search_algo: B3gSearchBNDMq
      hash_size: low
      bf_size: medium
   - wumanber:
      hash_size: low
      bf_size: medium

# Flow settings:
# By default, the reserved memory (memcap) for flows is 32MB. This is the limit
# for flow allocation inside the engine. You can change this value to allow
# more memory usage for flows.
# The hash_size determine the size of the hash used to identify flows inside
# the engine, and by default the value is 65536.
# At the startup, the engine can preallocate a number of flows, to get a better
# performance. The number of flows preallocated is 10000 by default.
# emergency_recovery is the percentage of flows that the engine need to
# prune before unsetting the emergency state. The emergency state is activated
# when the memcap limit is reached, allowing to create new flows, but
# prunning them with the emergency timeouts (they are defined below).
# If the memcap is reached, the engine will try to prune prune_flows
# with the default timeouts. If it doens't find a flow to prune, it will set
# the emergency bit and it will try again with more agressive timeouts.
# If that doesn't work, then it will try to kill the last time seen flows
# not in use.

flow:
  memcap: 33554432
  hash_size: 65536
  prealloc: 10000
  emergency_recovery: 30
  prune_flows: 5

# Specific timeouts for flows. Here you can specify the timeouts that the
# active flows will wait to transit from the current state to another, on each
# protocol. The value of "new" determine the seconds to wait after a hanshake or
# stream startup before the engine free the data of that flow it doesn't
# change the state to established (usually if we don't receive more packets
# of that flow). The value of "established" is the amount of
# seconds that the engine will wait to free the flow if it spend that amount
# without receiving new packets or closing the connection. "closed" is the
# amount of time to wait after a flow is closed (usually zero).
#
# There's an emergency mode that will become active under attack circumstances,
# making the engine to check flow status faster. This configuration variables
# use the prefix "emergency_" and work similar as the normal ones.
# Some timeouts doesn't apply to all the protocols, like "closed", for udp and
# icmp.

flow-timeouts:

  default:
    new: 30
    established: 300
```

```
     closed: 0
     emergency_new: 10
     emergency_established: 100
     emergency_closed: 0
   tcp:
     new: 60
     established: 3600
     closed: 120
     emergency_new: 10
     emergency_established: 300
     emergency_closed: 20
   udp:
     new: 30
     established: 300
     emergency_new: 10
     emergency_established: 100
   icmp:
     new: 30
     established: 300
     emergency_new: 10
     emergency_established: 100

# Stream engine settings. Here the TCP stream tracking and reaasembly
# engine is configured.
#
# stream:
#   memcap: 33554432        # 32mb tcp session memcap
#   checksum_validation: yes   # To validate the checksum of received
#                    # packet. If csum validation is specified as
#                    # "yes", then packet with invalid csum will not
#                    # be processed by the engine stream/app layer.
#                    # Warning: locally generated trafic can be
#                    # generated without checksum due to hardware offload
#                    # of checksum
#   max_sessions: 262144       # 256k concurrent sessions
#   prealloc_sessions: 32768   # 32k sessions prealloc'd
#   midstream: false        # don't allow midstream session pickups
#   async_oneside: false      # don't enable async stream handling
#   inline: no            # stream inline mode
#
#   reassembly:
#     memcap: 67108864         # 64mb tcp reassembly memcap
#     depth: 1048576          # 1 MB reassembly depth
#     toserver_chunk_size: 2560 # inspect raw stream in chunks of at least
#                    # this size
#     toclient_chunk_size: 2560 # inspect raw stream in chunks of at least
#                    # this size
stream:
  memcap: 33554432          # 32mb
  checksum_validation: yes     # reject wrong csums
  inline: no             # no inline mode
  reassembly:
    memcap: 67108864          # 64mb for reassembly
    depth: 1048576          # reassemble 1mb into a stream
    toserver_chunk_size: 2560
    toclient_chunk_size: 2560
```

```
# Logging configuration.  This is not about logging IDS alerts, but
# IDS output about what its doing, errors, etc.
logging:

  # The default log level, can be overridden in an output section.
  # Note that debug level logging will only be emitted if Suricata was
  # compiled with the --enable-debug configure option.
  #
  # This value is overriden by the SC_LOG_LEVEL env var.
  default-log-level: info

  # The default output format.  Optional parameter, should default to
  # something reasonable if not provided.  Can be overriden in an
  # output section.  You can leave this out to get the default.
  #
  # This value is overriden by the SC_LOG_FORMAT env var.
  #default-log-format: "[%i] %t - (%f:%l) <%d> (%n) -- "

  # A regex to filter output.  Can be overridden in an output section.
  # Defaults to empty (no filter).
  #
  # This value is overriden by the SC_LOG_OP_FILTER env var.
  default-output-filter:

  # Define your logging outputs.  If none are defined, or they are all
  # disabled you will get the default - console output.
  outputs:
  - console:
      enabled: yes
  - file:
      enabled: no
      filename: /var/log/suricata.log
  - syslog:
      enabled: no
      facility: local5
      format: "[%i] <%d> -- "

# PF_RING configuration. for use with native PF_RING support
# for more info see http://www.ntop.org/PF_RING.html
pfring:
  - interface: eth0
    # Number of receive threads (>1 will enable experimental flow pinned
    # runmode)
    threads: 1

    # Default interface we will listen on.
    interface: eth0

    # Default clusterid.  PF_RING will load balance packets based on flow.
    # All threads/processes that will participate need to have the same
    # clusterid.
    cluster-id: 99

    # Default PF_RING cluster type. PF_RING can load balance per flow or per hash.
    # This is only supported in versions of PF_RING > 4.1.1.
```

```
   cluster-type: cluster_round_robin
 # Second interface
 #- interface: eth1
 #  threads: 3
 #  cluster-id: 93
 #  cluster-type: cluster_flow

pcap:
 - interface: eth0
   #buffer-size: 32768
   #bpf-filter: "tcp and port 25"

# For FreeBSD ipfw(8) divert(4) support.
# Please make sure you have ipfw_load="YES" and ipdivert_load="YES"
# in /etc/loader.conf or kldload'ing the appropriate kernel modules.
# Additionally, you need to have an ipfw rule for the engine to see
# the packets from ipfw.  For Example:
#
#   ipfw add 100 divert 8000 ip from any to any
#
# The 8000 above should be the same number you passed on the command
# line, i.e. -d 8000
#
ipfw:

 # Reinject packets at the specified ipfw rule number.  This config
 # option is the ipfw rule number AT WHICH rule processing continues
 # in the ipfw processing system after the engine has finished
 # inspecting the packet for acceptance.  If no rule number is specified,
 # accepted packets are reinjected at the divert rule which they entered
 # and IPFW rule processing continues.  No check is done to verify
 # this will rule makes sense so care must be taken to avoid loops in ipfw.
 #
 ## The following example tells the engine to reinject packets
 # back into the ipfw firewall AT rule number 5500:
 #
 # ipfw-reinjection-rule-number: 5500

# Set the default rule path here to search for the files.
# if not set, it will look at the current working dir
default-rule-path: /etc/suricata/rules/
rule-files:
 - botcc.rules
 - ciarmy.rules
 - compromised.rules
 - drop.rules
 - dshield.rules
 - emerging-activex.rules
 - emerging-attack_response.rules
 - emerging-chat.rules
 - emerging-current_events.rules
 - emerging-deleted.rules
 - emerging-dns.rules
 - emerging-dos.rules
 - emerging-exploit.rules
 - emerging-ftp.rules
```

```
   - emerging-games.rules
   - emerging-icmp_info.rules
   - emerging-icmp.rules
   - emerging-imap.rules
   - emerging-inappropriate.rules
   - emerging-malware.rules
   - emerging-misc.rules
   - emerging-mobile_malware.rules
   - emerging-netbios.rules
   - emerging-p2p.rules
   - emerging-policy.rules
   - emerging-pop3.rules
   - emerging-rpc.rules
   - emerging-scada.rules
   - emerging-scan.rules
   - emerging-shellcode.rules
   - emerging-smtp.rules
   - emerging-snmp.rules
   - emerging-sql.rules
   - emerging-telnet.rules
   - emerging-tftp.rules
   - emerging-trojan.rules
   - emerging-user_agents.rules
   - emerging-virus.rules
   - emerging-voip.rules
   - emerging-web_client.rules
   - emerging-web_server.rules
   - emerging-web_specific_apps.rules
   - emerging-worm.rules
   - rbn-malvertisers.rules
   - rbn.rules
   - tor.rules

classification-file: /etc/suricata/classification.config
reference-config-file: /etc/suricata/reference.config

# Holds variables that would be used by the engine.
vars:

 # Holds the address group vars that would be passed in a Signature.
 # These would be retrieved during the Signature address parsing stage.
 address-groups:

  HOME_NET: "any"

  EXTERNAL_NET: $HOME_NET

  HTTP_SERVERS: "$HOME_NET"

  SMTP_SERVERS: "$HOME_NET"

  SQL_SERVERS: "$HOME_NET"

  DNS_SERVERS: "$HOME_NET"

  TELNET_SERVERS: "$HOME_NET"
```

```
    AIM_SERVERS: any

  # Holds the port group vars that would be passed in a Signature.
  # These would be retrieved during the Signature port parsing stage.
  port-groups:

   HTTP_PORTS: "80"

   SHELLCODE_PORTS: "!80"

   ORACLE_PORTS: 1521

   SSH_PORTS: 22

# Host specific policies for defragmentation and TCP stream
# reassembly.  The host OS lookup is done using a radix tree, just
# like a routing table so the most specific entry matches.
host-os-policy:
 # Make the default policy windows.
 windows: [0.0.0.0/0]
 bsd: []
 bsd_right: []
 old_linux: []
 linux: [10.0.0.0/8, 192.168.1.100, "8762:2352:6241:7245:E000:0000:0000:0000"]
 old_solaris: []
 solaris: ["::1"]
 hpux10: []
 hpux11: []
 irix: []
 macos: []
 vista: []
 windows2k3: []


# Limit for the maximum number of asn1 frames to decode (default 256)
asn1_max_frames: 256

##############################################################################
# Configure libhtp.
#
#
# default-config:     Used when no server-config matches
#   personality:      List of personalities used by default
#   request_body_limit: Limit reassembly of request body for inspection
#              by http_client_body & pcre /P option.
#
# server-config:      List of server configurations to use if address matches
#   address:          List of ip addresses or networks for this block
#   personalitiy:     List of personalities used by this block
#   request_body_limit: Limit reassembly of request body for inspection
#              by http_client_body & pcre /P option.
#
# Currently Available Personalities:
#   Minimal
#   Generic
```

```
#   IDS (default)
#   IIS_4_0
#   IIS_5_0
#   IIS_5_1
#   IIS_6_0
#   IIS_7_0
#   IIS_7_5
#   Apache
#   Apache_2_2
##############################################################################
libhtp:

  default-config:
    personality: IDS
    request_body_limit: 3072

  server-config:

   - apache:
       address: [192.168.1.0/24, 127.0.0.0/8, "::1"]
       personality: Apache_2_2
       request_body_limit: 4096

   - iis7:
       address:
         - 192.168.0.0/24
         - 192.168.10.0/24
       personality: IIS_7_0
       request_body_limit: 4096

# Profiling settings. Only effective if Suricata has been built with the
# the --enable-profiling configure flag.
#
profiling:

 # rule profiling
 rules:

   # Profiling can be disabled here, but it will still have a
   # performance impact if compiled in.
   enabled: yes
   filename: rule_perf.log
   append: yes

   # Sort options: ticks, avgticks, checks, matches, maxticks
   sort: avgticks

   # Limit the number of items printed at exit.
   limit: 100

 # packet profiling
 packets:

   # Profiling can be disabled here, but it will still have a
   # performance impact if compiled in.
   enabled: yes
```

```
filename: packet_stats.log
append: yes

# per packet csv output
csv:

  # Output can be disabled here, but it will still have a
  # performance impact if compiled in.
  enabled: no
  filename: packet_stats.csv
```

Appendix D: Directory Structure of the Testing Environment

The following is the output of ls -R:

```
.:
control
cpu-affinity
detect-engine
flow
flow-timeout
max-pending-packets
mpm-algo
request_body_limit
stream
test.pcap
test.sh

./control:
control.yaml

./cpu-affinity:
yes.yaml

./detect-engine:
high.yaml
low.yaml
medium.yaml

./flow:
hashsize
memcap
prealloc
pruneflows
recovery

./flow/hashsize:
131072.yaml
196608.yaml
262144.yaml
65536.yaml

./flow/memcap:
100663296.yaml
134217728.yaml
33554432.yaml
67108864.yaml

./flow/prealloc:
10000.yaml
20000.yaml
30000.yaml
40000.yaml

./flow/pruneflows:
10.yaml
```

15.yaml
20.yaml
5.yaml

./flow/recovery:
15.yaml
30.yaml
45.yaml

./flow-timeout:
tcp

./flow-timeout/tcp:
closed
established
new

./flow-timeout/tcp/closed:
120.yaml
20.yaml
30.yaml
60.yaml

./flow-timeout/tcp/established:
1800.yaml
300.yaml
3600.yaml
600.yaml
900.yaml

./flow-timeout/tcp/new:
10.yaml
30.yaml
60.yaml

./max-pending-packets:
100.yaml
150.yaml
200.yaml
50.yaml

./mpm-algo:
ac-gfbs.yaml
ac.yaml
b2gc.yaml
b2gm.yaml
b2g.yaml
b3g.yaml
wumanber.yaml

./request_body_limit:
12288.yaml
3072.yaml
6144.yaml
9216.yaml

./stream:
csum-val
inline
memcap

./stream/csum-val:
no.yaml
yes.yaml

./stream/inline:
no.yaml
yes.yaml

./stream/memcap:
100663296.yaml
134217728.yaml
33554432.yaml
67108864.yaml

Appendix E: Experiment Automation Script

```
echo control
suricata -c control/control.yaml -r test.pcap &> control/control.yaml.results.1
suricata -c control/control.yaml -r test.pcap &> control/control.yaml.results.2
suricata -c control/control.yaml -r test.pcap &> control/control.yaml.results.3
suricata -c control/control.yaml -r test.pcap &> control/control.yaml.results.4
echo cpu-affinity
suricata -c cpu-affinity/yes.yaml -r test.pcap &> cpu-affinity/yes.yaml.results.1
suricata -c cpu-affinity/yes.yaml -r test.pcap &> cpu-affinity/yes.yaml.results.2
suricata -c cpu-affinity/yes.yaml -r test.pcap &> cpu-affinity/yes.yaml.results.3
echo detect-engine
suricata -c detect-engine/high.yaml -r test.pcap &> detect-engine/high.yaml.results.1
suricata -c detect-engine/high.yaml -r test.pcap &> detect-engine/high.yaml.results.2
suricata -c detect-engine/high.yaml -r test.pcap &> detect-engine/high.yaml.results.3
suricata -c detect-engine/low.yaml -r test.pcap &> detect-engine/low.yaml.results.1
suricata -c detect-engine/low.yaml -r test.pcap &> detect-engine/low.yaml.results.2
suricata -c detect-engine/low.yaml -r test.pcap &> detect-engine/low.yaml.results.3
suricata -c detect-engine/medium.yaml -r test.pcap &> detect-engine/medium.yaml.results.1
suricata -c detect-engine/medium.yaml -r test.pcap &> detect-engine/medium.yaml.results.2
suricata -c detect-engine/medium.yaml -r test.pcap &> detect-engine/medium.yaml.results.3
echo flow
echo hashsize
suricata -c flow/hashsize/131072.yaml -r test.pcap &> flow/hashsize/131072.yaml.results.1
suricata -c flow/hashsize/131072.yaml -r test.pcap &> flow/hashsize/131072.yaml.results.2
suricata -c flow/hashsize/131072.yaml -r test.pcap &> flow/hashsize/131072.yaml.results.3
suricata -c flow/hashsize/196608.yaml -r test.pcap &> flow/hashsize/196608.yaml.results.1
suricata -c flow/hashsize/196608.yaml -r test.pcap &> flow/hashsize/196608.yaml.results.2
suricata -c flow/hashsize/196608.yaml -r test.pcap &> flow/hashsize/196608.yaml.results.3
suricata -c flow/hashsize/262144.yaml -r test.pcap &> flow/hashsize/262144.yaml.results.1
suricata -c flow/hashsize/262144.yaml -r test.pcap &> flow/hashsize/262144.yaml.results.2
suricata -c flow/hashsize/262144.yaml -r test.pcap &> flow/hashsize/262144.yaml.results.3
suricata -c flow/hashsize/65536.yaml -r test.pcap &> flow/hashsize/65536.yaml.results.1
suricata -c flow/hashsize/65536.yaml -r test.pcap &> flow/hashsize/65536.yaml.results.2
suricata -c flow/hashsize/65536.yaml -r test.pcap &> flow/hashsize/65536.yaml.results.3
echo memcap
suricata -c flow/memcap/100663296.yaml -r test.pcap &> flow/memcap/100663296.yaml.results.1
suricata -c flow/memcap/100663296.yaml -r test.pcap &> flow/memcap/100663296.yaml.results.2
suricata -c flow/memcap/100663296.yaml -r test.pcap &> flow/memcap/100663296.yaml.results.3
suricata -c flow/memcap/134217728.yaml -r test.pcap &> flow/memcap/134217728.yaml.results.1
suricata -c flow/memcap/134217728.yaml -r test.pcap &> flow/memcap/134217728.yaml.results.2
suricata -c flow/memcap/134217728.yaml -r test.pcap &> flow/memcap/134217728.yaml.results.3
suricata -c flow/memcap/33554432.yaml -r test.pcap &> flow/memcap/33554432.yaml.results.1
suricata -c flow/memcap/33554432.yaml -r test.pcap &> flow/memcap/33554432.yaml.results.2
suricata -c flow/memcap/33554432.yaml -r test.pcap &> flow/memcap/33554432.yaml.results.3
suricata -c flow/memcap/67108864.yaml -r test.pcap &> flow/memcap/67108864.yaml.results.1
suricata -c flow/memcap/67108864.yaml -r test.pcap &> flow/memcap/67108864.yaml.results.2
suricata -c flow/memcap/67108864.yaml -r test.pcap &> flow/memcap/67108864.yaml.results.3
echo prealloc
suricata -c flow/prealloc/10000.yaml -r test.pcap &> flow/prealloc/10000.yaml.results.1
suricata -c flow/prealloc/10000.yaml -r test.pcap &> flow/prealloc/10000.yaml.results.2
suricata -c flow/prealloc/10000.yaml -r test.pcap &> flow/prealloc/10000.yaml.results.3
suricata -c flow/prealloc/20000.yaml -r test.pcap &> flow/prealloc/20000.yaml.results.1
suricata -c flow/prealloc/20000.yaml -r test.pcap &> flow/prealloc/20000.yaml.results.2
suricata -c flow/prealloc/20000.yaml -r test.pcap &> flow/prealloc/20000.yaml.results.3
```

```
suricata -c flow/prealloc/30000.yaml -r test.pcap &> flow/prealloc/30000.yaml.results.1
suricata -c flow/prealloc/30000.yaml -r test.pcap &> flow/prealloc/30000.yaml.results.2
suricata -c flow/prealloc/30000.yaml -r test.pcap &> flow/prealloc/30000.yaml.results.3
suricata -c flow/prealloc/40000.yaml -r test.pcap &> flow/prealloc/40000.yaml.results.1
suricata -c flow/prealloc/40000.yaml -r test.pcap &> flow/prealloc/40000.yaml.results.2
suricata -c flow/prealloc/40000.yaml -r test.pcap &> flow/prealloc/40000.yaml.results.3
echo pruneflows
suricata -c flow/pruneflows/10.yaml -r test.pcap &> flow/pruneflows/10.yaml.results.1
suricata -c flow/pruneflows/10.yaml -r test.pcap &> flow/pruneflows/10.yaml.results.2
suricata -c flow/pruneflows/10.yaml -r test.pcap &> flow/pruneflows/10.yaml.results.3
suricata -c flow/pruneflows/15.yaml -r test.pcap &> flow/pruneflows/15.yaml.results.1
suricata -c flow/pruneflows/15.yaml -r test.pcap &> flow/pruneflows/15.yaml.results.2
suricata -c flow/pruneflows/15.yaml -r test.pcap &> flow/pruneflows/15.yaml.results.3
suricata -c flow/pruneflows/20.yaml -r test.pcap &> flow/pruneflows/20.yaml.results.1
suricata -c flow/pruneflows/20.yaml -r test.pcap &> flow/pruneflows/20.yaml.results.2
suricata -c flow/pruneflows/20.yaml -r test.pcap &> flow/pruneflows/20.yaml.results.3
suricata -c flow/pruneflows/5.yaml -r test.pcap &> flow/pruneflows/5.yaml.results.1
suricata -c flow/pruneflows/5.yaml -r test.pcap &> flow/pruneflows/5.yaml.results.2
suricata -c flow/pruneflows/5.yaml -r test.pcap &> flow/pruneflows/5.yaml.results.3
echo recovery
suricata -c flow/recovery/15.yaml -r test.pcap &> flow/recovery/15.yaml.results.1
suricata -c flow/recovery/15.yaml -r test.pcap &> flow/recovery/15.yaml.results.2
suricata -c flow/recovery/15.yaml -r test.pcap &> flow/recovery/15.yaml.results.3
suricata -c flow/recovery/30.yaml -r test.pcap &> flow/recovery/30.yaml.results.1
suricata -c flow/recovery/30.yaml -r test.pcap &> flow/recovery/30.yaml.results.2
suricata -c flow/recovery/30.yaml -r test.pcap &> flow/recovery/30.yaml.results.3
suricata -c flow/recovery/45.yaml -r test.pcap &> flow/recovery/45.yaml.results.1
suricata -c flow/recovery/45.yaml -r test.pcap &> flow/recovery/45.yaml.results.2
suricata -c flow/recovery/45.yaml -r test.pcap &> flow/recovery/45.yaml.results.3
echo flow-timeout
echo tcp
echo closed
suricata -c flow-timeout/tcp/closed/120.yaml -r test.pcap &> flow-timeout/tcp/closed/120.yaml.results.1
suricata -c flow-timeout/tcp/closed/120.yaml -r test.pcap &> flow-timeout/tcp/closed/120.yaml.results.2
suricata -c flow-timeout/tcp/closed/120.yaml -r test.pcap &> flow-timeout/tcp/closed/120.yaml.results.3
suricata -c flow-timeout/tcp/closed/20.yaml -r test.pcap &> flow-timeout/tcp/closed/20.yaml.results.1
suricata -c flow-timeout/tcp/closed/20.yaml -r test.pcap &> flow-timeout/tcp/closed/20.yaml.results.2
suricata -c flow-timeout/tcp/closed/20.yaml -r test.pcap &> flow-timeout/tcp/closed/20.yaml.results.3
suricata -c flow-timeout/tcp/closed/30.yaml -r test.pcap &> flow-timeout/tcp/closed/30.yaml.results.1
suricata -c flow-timeout/tcp/closed/30.yaml -r test.pcap &> flow-timeout/tcp/closed/30.yaml.results.2
suricata -c flow-timeout/tcp/closed/30.yaml -r test.pcap &> flow-timeout/tcp/closed/30.yaml.results.3
suricata -c flow-timeout/tcp/closed/60.yaml -r test.pcap &> flow-timeout/tcp/closed/60.yaml.results.1
suricata -c flow-timeout/tcp/closed/60.yaml -r test.pcap &> flow-timeout/tcp/closed/60.yaml.results.2
suricata -c flow-timeout/tcp/closed/60.yaml -r test.pcap &> flow-timeout/tcp/closed/60.yaml.results.3
echo established
suricata -c flow-timeout/tcp/established/1800.yaml -r test.pcap &> flow-timeout/tcp/established/1800.yaml.results.1
suricata -c flow-timeout/tcp/established/1800.yaml -r test.pcap &> flow-timeout/tcp/established/1800.yaml.results.2
suricata -c flow-timeout/tcp/established/1800.yaml -r test.pcap &> flow-timeout/tcp/established/1800.yaml.results.3
suricata -c flow-timeout/tcp/established/300.yaml -r test.pcap &> flow-timeout/tcp/established/300.yaml.results.1
suricata -c flow-timeout/tcp/established/300.yaml -r test.pcap &> flow-timeout/tcp/established/300.yaml.results.2
suricata -c flow-timeout/tcp/established/300.yaml -r test.pcap &> flow-
```

timeout/tcp/established/300.yaml.results.3
suricata -c flow-timeout/tcp/established/3600.yaml -r test.pcap &> flow-timeout/tcp/established/3600.yaml.results.1
suricata -c flow-timeout/tcp/established/3600.yaml -r test.pcap &> flow-timeout/tcp/established/3600.yaml.results.2
suricata -c flow-timeout/tcp/established/3600.yaml -r test.pcap &> flow-timeout/tcp/established/3600.yaml.results.3
suricata -c flow-timeout/tcp/established/600.yaml -r test.pcap &> flow-timeout/tcp/established/600.yaml.results.1
suricata -c flow-timeout/tcp/established/600.yaml -r test.pcap &> flow-timeout/tcp/established/600.yaml.results.2
suricata -c flow-timeout/tcp/established/600.yaml -r test.pcap &> flow-timeout/tcp/established/600.yaml.results.3
suricata -c flow-timeout/tcp/established/900.yaml -r test.pcap &> flow-timeout/tcp/established/900.yaml.results.1
suricata -c flow-timeout/tcp/established/900.yaml -r test.pcap &> flow-timeout/tcp/established/900.yaml.results.2
suricata -c flow-timeout/tcp/established/900.yaml -r test.pcap &> flow-timeout/tcp/established/900.yaml.results.3
echo new
suricata -c flow-timeout/tcp/new/10.yaml -r test.pcap &> flow-timeout/tcp/new/10.yaml.results.1
suricata -c flow-timeout/tcp/new/10.yaml -r test.pcap &> flow-timeout/tcp/new/10.yaml.results.2
suricata -c flow-timeout/tcp/new/10.yaml -r test.pcap &> flow-timeout/tcp/new/10.yaml.results.3
suricata -c flow-timeout/tcp/new/30.yaml -r test.pcap &> flow-timeout/tcp/new/30.yaml.results.1
suricata -c flow-timeout/tcp/new/30.yaml -r test.pcap &> flow-timeout/tcp/new/30.yaml.results.2
suricata -c flow-timeout/tcp/new/30.yaml -r test.pcap &> flow-timeout/tcp/new/30.yaml.results.3
suricata -c flow-timeout/tcp/new/60.yaml -r test.pcap &> flow-timeout/tcp/new/60.yaml.results.1
suricata -c flow-timeout/tcp/new/60.yaml -r test.pcap &> flow-timeout/tcp/new/60.yaml.results.2
suricata -c flow-timeout/tcp/new/60.yaml -r test.pcap &> flow-timeout/tcp/new/60.yaml.results.3
echo max-pending-packets
suricata -c max-pending-packets/100.yaml -r test.pcap &> max-pending-packets/100.yaml.results.1
suricata -c max-pending-packets/100.yaml -r test.pcap &> max-pending-packets/100.yaml.results.2
suricata -c max-pending-packets/100.yaml -r test.pcap &> max-pending-packets/100.yaml.results.3
suricata -c max-pending-packets/150.yaml -r test.pcap &> max-pending-packets/150.yaml.results.1
suricata -c max-pending-packets/150.yaml -r test.pcap &> max-pending-packets/150.yaml.results.2
suricata -c max-pending-packets/150.yaml -r test.pcap &> max-pending-packets/150.yaml.results.3
suricata -c max-pending-packets/200.yaml -r test.pcap &> max-pending-packets/200.yaml.results.1
suricata -c max-pending-packets/200.yaml -r test.pcap &> max-pending-packets/200.yaml.results.2
suricata -c max-pending-packets/200.yaml -r test.pcap &> max-pending-packets/200.yaml.results.3
suricata -c max-pending-packets/50.yaml -r test.pcap &> max-pending-packets/50.yaml.results.1
suricata -c max-pending-packets/50.yaml -r test.pcap &> max-pending-packets/50.yaml.results.2
suricata -c max-pending-packets/50.yaml -r test.pcap &> max-pending-packets/50.yaml.results.3
echo mpm-algo
suricata -c mpm-algo/ac-gfbs.yaml -r test.pcap &> mpm-algo/ac-gfbs.yaml.results.1
suricata -c mpm-algo/ac-gfbs.yaml -r test.pcap &> mpm-algo/ac-gfbs.yaml.results.2
suricata -c mpm-algo/ac-gfbs.yaml -r test.pcap &> mpm-algo/ac-gfbs.yaml.results.3
suricata -c mpm-algo/ac.yaml -r test.pcap &> mpm-algo/ac.yaml.results.1
suricata -c mpm-algo/ac.yaml -r test.pcap &> mpm-algo/ac.yaml.results.2
suricata -c mpm-algo/ac.yaml -r test.pcap &> mpm-algo/ac.yaml.results.3
suricata -c mpm-algo/b2gc.yaml -r test.pcap &> mpm-algo/b2gc.yaml.results.1
suricata -c mpm-algo/b2gc.yaml -r test.pcap &> mpm-algo/b2gc.yaml.results.2
suricata -c mpm-algo/b2gc.yaml -r test.pcap &> mpm-algo/b2gc.yaml.results.3
suricata -c mpm-algo/b2gm.yaml -r test.pcap &> mpm-algo/b2gm.yaml.results.1
suricata -c mpm-algo/b2gm.yaml -r test.pcap &> mpm-algo/b2gm.yaml.results.2
suricata -c mpm-algo/b2gm.yaml -r test.pcap &> mpm-algo/b2gm.yaml.results.3
suricata -c mpm-algo/b2g.yaml -r test.pcap &> mpm-algo/b2g.yaml.results.1

```
suricata -c mpm-algo/b2g.yaml -r test.pcap &> mpm-algo/b2g.yaml.results.2
suricata -c mpm-algo/b2g.yaml -r test.pcap &> mpm-algo/b2g.yaml.results.3
suricata -c mpm-algo/b3g.yaml -r test.pcap &> mpm-algo/b3g.yaml.results.1
suricata -c mpm-algo/b3g.yaml -r test.pcap &> mpm-algo/b3g.yaml.results.2
suricata -c mpm-algo/b3g.yaml -r test.pcap &> mpm-algo/b3g.yaml.results.3
suricata -c mpm-algo/wumanber.yaml -r test.pcap &> mpm-algo/wumanber.yaml.results.1
suricata -c mpm-algo/wumanber.yaml -r test.pcap &> mpm-algo/wumanber.yaml.results.2
suricata -c mpm-algo/wumanber.yaml -r test.pcap &> mpm-algo/wumanber.yaml.results.3
echo request-body-limit
suricata -c request_body_limit/12288.yaml -r test.pcap &> request_body_limit/12288.yaml.results.1
suricata -c request_body_limit/12288.yaml -r test.pcap &> request_body_limit/12288.yaml.results.2
suricata -c request_body_limit/12288.yaml -r test.pcap &> request_body_limit/12288.yaml.results.3
suricata -c request_body_limit/3072.yaml -r test.pcap &> request_body_limit/3072.yaml.results.1
suricata -c request_body_limit/3072.yaml -r test.pcap &> request_body_limit/3072.yaml.results.2
suricata -c request_body_limit/3072.yaml -r test.pcap &> request_body_limit/3072.yaml.results.3
suricata -c request_body_limit/6144.yaml -r test.pcap &> request_body_limit/6144.yaml.results.1
suricata -c request_body_limit/6144.yaml -r test.pcap &> request_body_limit/6144.yaml.results.2
suricata -c request_body_limit/6144.yaml -r test.pcap &> request_body_limit/6144.yaml.results.3
suricata -c request_body_limit/9216.yaml -r test.pcap &> request_body_limit/9216.yaml.results.1
suricata -c request_body_limit/9216.yaml -r test.pcap &> request_body_limit/9216.yaml.results.2
suricata -c request_body_limit/9216.yaml -r test.pcap &> request_body_limit/9216.yaml.results.3
echo stream
echo csum-val
suricata -c stream/csum-val/no.yaml -r test.pcap &> stream/csum-val/no.yaml.results.1
suricata -c stream/csum-val/no.yaml -r test.pcap &> stream/csum-val/no.yaml.results.2
suricata -c stream/csum-val/no.yaml -r test.pcap &> stream/csum-val/no.yaml.results.3
suricata -c stream/csum-val/yes.yaml -r test.pcap &> stream/csum-val/yes.yaml.results.1
suricata -c stream/csum-val/yes.yaml -r test.pcap &> stream/csum-val/yes.yaml.results.2
suricata -c stream/csum-val/yes.yaml -r test.pcap &> stream/csum-val/yes.yaml.results.3
echo inline
suricata -c stream/inline/no.yaml -r test.pcap &> stream/inline/no.yaml.results.1
suricata -c stream/inline/no.yaml -r test.pcap &> stream/inline/no.yaml.results.2
suricata -c stream/inline/no.yaml -r test.pcap &> stream/inline/no.yaml.results.3
suricata -c stream/inline/yes.yaml -r test.pcap &> stream/inline/yes.yaml.results.1
suricata -c stream/inline/yes.yaml -r test.pcap &> stream/inline/yes.yaml.results.2
suricata -c stream/inline/yes.yaml -r test.pcap &> stream/inline/yes.yaml.results.3
echo memcap
suricata -c stream/memcap/100663296.yaml -r test.pcap &> stream/memcap/100663296.yaml.results.1
suricata -c stream/memcap/100663296.yaml -r test.pcap &> stream/memcap/100663296.yaml.results.2
suricata -c stream/memcap/100663296.yaml -r test.pcap &> stream/memcap/100663296.yaml.results.3
suricata -c stream/memcap/134217728.yaml -r test.pcap &> stream/memcap/134217728.yaml.results.1
suricata -c stream/memcap/134217728.yaml -r test.pcap &> stream/memcap/134217728.yaml.results.2
suricata -c stream/memcap/134217728.yaml -r test.pcap &> stream/memcap/134217728.yaml.results.3
suricata -c stream/memcap/33554432.yaml -r test.pcap &> stream/memcap/33554432.yaml.results.1
suricata -c stream/memcap/33554432.yaml -r test.pcap &> stream/memcap/33554432.yaml.results.2
suricata -c stream/memcap/33554432.yaml -r test.pcap &> stream/memcap/33554432.yaml.results.3
suricata -c stream/memcap/67108864.yaml -r test.pcap &> stream/memcap/67108864.yaml.results.1
suricata -c stream/memcap/67108864.yaml -r test.pcap &> stream/memcap/67108864.yaml.results.2
suricata -c stream/memcap/67108864.yaml -r test.pcap &> stream/memcap/67108864.yaml.results.3
```

Appendix F: Copy of Results From Final Trials

The following are the results from the final run of the experiment script. The columns are the filename for the output of that Suricata run, and the time in seconds reported by Suricata for the run:

Results File	Time in Seconds
experiment/control/control.yaml.results.1	81
experiment/control/control.yaml.results.2	76
experiment/control/control.yaml.results.3	76
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